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ABSTRACT

This journal highlights five papers by international authors on various topics in education. In the first article, it was hypothesized deductively that extroverts will show more fluctuations in attending than introverts and that individuals with high neuroticism show more fluctuations in attention span than less neurotic persons. The second article presents a quality control system for developing reliable and valid, teacher made, objective-referenced tests. The third article attempts to illustrate the usefulness of the Weighted Net Percentage Difference (WNPD) technique as a methodological tool for the analysis of theoretical social mobility models. The fourth article, written in French with a summary in English, describes the analysis of the regulatory effect of three kinds of feedback (stereotype, specific, and feedback with self-control) on preoperational subjects. The final article in the compilation describes a pilot educational experiment concerning the teaching of English as a second language in Belgium. A chronicle of summaries of research in progress and a section with abstracts of reports presented to the seventh World Congress of the International Association for the Advancement of Educational Research are also included. (JN)

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FLUCTUATION OF ATTENTION AS A FUNCTION OF EXTROVERSION, NEUROTICISM AND MENTAL SET *

by

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INTRODUCTION

Inspite of a practical reality of attending, the status of attention in systematic psychology was uncertain and dubious for a long time. Therefore, TITCHENER (1908) said that 'the doctrine of attention is the nerve of the whole psychological system, and that as men judge of it, so shall they be judged before the general tribunal of psychology'. TITCHENER spoke as a structuralist. The functionalists though, had a different view of the nature of attention, they agreed on the importance of it. However, with the appearance of behaviourism, interest in attention began to decline. The cause of this regression is to be found in the swing in psychological methodology from an emphasis upon the phenomenal aspects of experience to the behavioural aspects, and the consequent tendency to reject terminology that had acquired a mentalistic tinge. WATSON ignored attention ; BEKHTREV reduced sensory attention to the reflex adjustment to the incoming stimulus and ideational attention (concentration) to implicit speech (PASCHAL 1941). But we find that dispite the criticisms that have been aimed at it, the attempts to read it out of the party, 'attention' has had a hardiness that enabled it to survive. And we find that in the 1950's interest in the concept renewed.

* This research paper is based on a dissertation submitted by the first author to Nagpur University, in partial fulfilment of the requirements for the M.A. degree in Psychology, in the year 1975, under the supervision of the latter.

In the midst of all these theoretical doubts and uncertainties research has continued on certain problems that stem from the day to day facts of attention and inattention and some distinctive psychological experiments have been invented to identify the external and internal determiners of attention ; to understand the nature of distraction and divisibility of attention ; to measure the span of attention and to study the phenomenon of 'fluctuation of attention'.

Thus, survey of literature shows that a large volume of research has been done to understand the phenomenon of attention. However, most of the experiments have been conducted from the standpoint of an experimental (S-R) psychology and a few in the light of personality psychology. And where such attempts have been made, contradictory results have served to act as a source of hinderence in attributing some definite role to 'personality' in 'attention' in general and in its span, divisibility and fluctuation in particular. This state of affairs brings to the light the need and importance of further investigation in the field so as to build up a ground on which a personality-oriented theory of attention may develop. That is probably why KOTHURKAR (1972), one of the editors of Indian Council of Social Science Research Publication, while reflecting upon the state of attention, mentioned that 'considering its theoretical and practical importance, it is surprising that "attention" has attracted so little work from Indian Psychologists – there is a considerable dearth of systematic experimental studies'.

Therefore, under a banner of intradisciplinary approach and with an intention to link personality psychology with attention it was decided to study a special feature of attention, viz. 'fluctuation' in the light of those personality dimensions only which have been empirically identified and established within a sound theoretical frame work and accepted by majority of personality theorists. Eysenckian Dimensons of personality, namely extroversion-introversion and neuroticism being such, in the present piece of research, an attempt was made to see how far these 'big two' (i.e. E-I & N) and mental set (as induced by instructions) play a role in accounting for individual differences in fluctuation of attention.

Problems and Hypotheses

Scientific research being a systematically controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among the variables involved in the problem(s), specification of research worthy problem(s) and related hypothesis (s) became a sine quo non in this investigation. As such attempts were made first to spell out the problems of the present study in the form of interrogative statements as under :

(1) Do extraversion and neuroticism separately as well as jointly influence fluctuation of attention ?

(2) Does mental set influence fluctuation of attention ?

(3) Do extraversion, neuroticism and mental set together influence fluctuation of attention ?

It is obvious from the problems stated above that the present study was mainly concerned with four variables. Therefore, efforts were made in the pages that follow to delineate all those relevant aspects of these four constructs which are more conducive in specifying their nature operationally and more logical in arriving deductively at the hypotheses on sound theoretical grounds.

Fluctuation of Attention

Given a field of stimuli, the first response is governed by the balance of external and internal determiners of attention. Now let the stimuli remain unchanged, we expect attention to remain fixed. But what happens in most cases is quite different. Attention shifts. Since the external determiners remain constant, we infer that some internal factor(s) must have played a role. To explain such fluctuations of attention various theories have been advanced. For the sake of brevity it can simply be mentioned here that by and large these theories fall into two major groups namely (1) peripheral and (2) Central (Collins & Drever 1968). However, a third view which is a combination of the Central and peripheral theories needs special consideration as it has potentiality of explaining the phenomenon of fluctuation of attention in the light of personality dimentions. This third view runs as follows :

HULL considers the concept of reactive inhibition (I_R) as an important one in the application of behavior theory to personality. I_R is closely similar to PAVLOV's internal inhibition or as what EYSENCK calls 'temporal inhibition'. It is a kind of neural fatigue, produced whenever a response occurs, and as such acts as a barrier to repetition and directly inhibits reaction potential. It also, however, has a second aspect because of the discomfort and pain, associated with fatigue generally. These act as 'drives' and consequently produce reinforcement whenever I_R is reduced through inactivity. EYSENCK (1957) has mentioned some of the Hullian postulates which are relevant for deductions in the field of personality, of which the postulates stating the *'fundamental law of behaviour'* and *'reactive inhibition'* are the predominant ones.

KIMBLE (1949, 1952) extended HULL's theory by a detailed discussion of the growth of I_R. According to him D_- grows with each repetition until it reaches a level at which it balances. D_+. At this point behaviour (SER) ceases. This ceasation of behaviour may be called an involuntary rest pause (I.R.P.), and during it a certain portion of D_- dissipates. When enough inhibitive drive has dissipated, activity begins again and more D_- is accumulated, until the critical level where $D_+ = D_-$ is reached and another I.R.P. supervence. Thus, in terms of these two parts of the equation performance should continue in fits and starts (EYSENCK 1957).

Thus to explain fluctuation of attention on the basis of I_R we can say that D + leads to concentration of attention on the stimulus. Continued attention leads to the growth of D_-, when $D_- = D_+$ then concentration of attention ceases and attention fluctuates. This fluctuation leads to dissipation of a certain portion of D_-. When enough inhibitive drive has dissipated, activity begins again, i.e. individual is again able to concentrate his attention. Therefore, in the present study the construct 'fluctuation of attention' was operationally defined as under :

'In a reversible perspective stimulus-situation, it is a periodical change in clearness, as when what was figure becomes ground and vice-versa on account of concentration (D_+) and accumulation and dissipation of reactive inhibition (D_-).'

EXTRAVERSION – INTROVERSION

Commenting on the concepts of E & I as used in his system of personality theory, EYSENCK says : 'Terms such as extraversion and introversion are used in our discussion in a sense strictly derived from empirical studies ..... We merely wish to point out that our own use of these terms must stand and fall by empirical confirmation and owe more to the work of factor analysts and early experimentalists ..... than to Jung and his followers'.

According to EYSENCK the typical behaviour of an extravert 'is sociable, like parties, has may friends ... He craves for excitment, take chances ... acts on the spur of the moment and is generally an impulse individual ... and generally likes change... He tends to be aggressive and looses his temper quickly, although his feelings are not kept under tight control and he is not always a reliable person .....' On the other hand the typical introvert 'is a quiet retiring sort of person, introspective ... is reserved and distant except to intimate friends. He tends to plan ahead, looks before he leaps and distrusts the impulse of the moment. He doesn't like excitment ... keeps his feeling under close control, seldom behaves in an aggressive manner and does not lose his temper easily. He is reliable ... and places great value on ethical standards.' Further he stresses the point that the majority of people cluster towards the middle of the continuum and a few closely resemble the two extremes described above.

For taking care of the phenomenon of individual differences and predicting them on the basis of his personality equation viz. $P = P_c \times E$ (EYSENCK 1968, p. 79), EYSENCK formulated mainly two postulates in which the concept of reactive inhibition (I_R) as the property of the central nervous system, is the underlying dominating current. The first, the postulate of individual differences runs as follows :

'Human beings differ with respect to the speed with which excitation and inhibition are produced, the strength of the excitation and inhibition produced, and the speed with which inhibition is dissipated. These differences are properties of the physical structures involved in making stimulus-response connections'. (EYSENCK 1957, p. 114).

The second, 'the typological postulate' runs in its paraphrased form as under :

'Individuals in whom excitatory potential is generated slowly, and in whom the excitatory potentials so generated are relatively weak ; reactive inhibition is strong and developed quickly, dissipated slowly, are pre-disposed to develop extraverted patterns of behaviour. Individuals in whom excitatory potential is generated quickly and in whom excitatory potentials so generated are strong ; reactive inhibition is weak and developed slowly and dissipated quickly are thereby predisposed to develop introverted patterns of behaviour.'

On the basis of these postulates EYSENCK made numerous predictions in the field of learning and perception. And in the field of attention, reasoning from HULL's postulate on reactive inhibition, he proposes that the extravert, in long continuing task, may be expected to show signs of wandering of attention or mental blocking sooner than the introvert and these 'involuntary rest pauses' will last longer than the periods of reactive inhibition in the performance of the introvert, (WOODWORTH & SHEEHAN 1967).

MC DOUGALL (1924) suggested originally that reversals (reversible perspective alternation) should be more numerous in introverts than in extraverts. His argument apparently is resting on what we would now call the facilitating effects of greater excitatory potential of the introverts. However, more recent writers have suggested that alternation effects of this type are due to affinities with inhibition ; it would follow that greater satiation, leading to a more rapid rate of alternation, would be found in extraverts (EYSENCK 1963, p. 21).

Such contradictory predictions regarding the rate of fluctuation of attention of extraverts and introverts, it was felt, should not go without rigorous experimental verification.

NEUROTICISM

Neuroticism, the second dimension of personality as put forth by EYSENCK is a trait which forms a continuum from the normal to the neurotic end... Points near the plus end of our hypothetical continuum represent well integrated, emotionally stable, non-neurotic personalities , points toward the minus end of the hypothetical continuum represent poorly integrated, emotionally unstable, neurotic personalities

(EYSENCK 1962, p. 52). This factor of neuroticism or emotionality is also referred to as the stability-instability dimension. At the positive extreme there are people whose emotions are stable, less easily aroused, people who are calm, even tempered, carefree and reliable representing the normal persons typical of the stable type. At the other extreme there are moody, touchy, anxious, restless and so forth characterising the unstable or the neurotic type. In other words, neurotics over-react to a variety of stimuli, this overreaction takes the form of very strong emotions being experienced under conditions where most people only feel weak emotion, if any at all (EYSENCK 1965, p. 20).

At the genotypic level, EYSENCK states that differences between people in emotionality or neuroticism are mediated by inherited differences in the lability and excitability of the autonomic nervous system. He postulates that the behaviour of neurotics and quite generally, people who have high scores on neuroticism, is causally related to an excesive lability of their autonomic nervous system. Some people are constitutionally pre-disposed to react strongly, lastingly and quickly, with their sympathetic system towards incoming stimuli of various kinds whereas others are predisposed to react less strongly, less quickly with their autonomic system to various stimuli impinging upon the sense organs (EYSENCK 1965, p 32).

While EYSENCK views neuroticism as identical with emotionality and instability, SPENCE and TAYLOR and others identify it with anxiety in which case it is considered as a drive. According to MACCORQUODALE (1955), anxiety may be conceptionalized as a built-in, constantly and available drive state which people bring with them in different amounts to various situations.

SINHA & SINHA (1959) have tried to explain rate of fluctuation of attention of neurotics on the basis of rigidity of behaviour. They believe that 'rigidity of behaviour is an important mark of neuroticism. We can thus reasonably expect the neurotic to stick to what they perceive at the first instance. In other words change in their perceptions will be less frequent than what is to be expected in the normals.'

SINGH, SHARMA & VIMAL (1961) have tried to explain higher rate of fluctuation of attention in individuals with high neuroticism scores in the following way 'as motivation or drive helps the concentration of asubject on a stimulus, and fixation gives rise to satiation over

which motivation seems to have no control, it is just possible that the greater fluctuations in these subjects may have occured probably because of greater fixation on the attention stimulus, as a result of their greater drive level which produces quicker satiation leading to fluctuations'.

In the light of McDOUGALL's theory it would not be at all surprising if neurotics were found to have a lower rate of oscillation than normals. McDOUGALL holds that cerebral activity inhibits the activity of the lower centures, and that this carebral activity, through rate of nervous transmission, is linked casually with rapid rate of reversal. However this finding requires confirmation in a properly controlled experiment before attempt at explanation becomes necessary (EYSENCK 1950, p. 108).

Thus about the role of neuroticism in influencing the rate of fluctuation of attention, we find contradictory predictions. Hence considering it as a drive ; it was decided to see how far it influences the rate of fluctuations of attention.

MENTAL SET

It is a preparation or readiness for a certain kind of activity (CHAPLIN, 1968). It influences behaviour profoundly. It has facilitatory and/or inhibitory effects upon on-going activity of the individual is mentally ready and inhibits those for which he is not prepared. In the field of learning its influence on performance has been studied immensly. STALWARTS like POSTMAN and EGAN (1964) have recognized its utmost importance in learning and performance and advised the fellow researchers by mentioning that 'the experimenter can control and manipulate set by means of instructions to the subject. Sets are highly flexible and sensitive to even slight variations in instructions It is, therefore, important to standardize the instructions for experiment and to keep them constant from subject to subject'.

And while explaining the potent role the mental set can play in fluctuation of attention, MUKHERJEE (1956) mentioned that 'with no specific instruction to the subject it has been found that a geometrical figure with an ambiguous perspective fluctuates at seemingly regular intervals, alternating between the concave and the convex. But this

regularity is broken by the attitude of the subject. If the subject is instructed to hold any of the figures the stability for the figure becomes greater. The figure will change despite his effort to hold it, but it will very likely change less often. Similarly if the subject is instructed to hasten the fluctuation, the fluctuation is accelerated. Thus all other conditions being equal the rate of fluctuation of a reversible figure is a function of the mental attitude of the subject.'

Therefore it was decided to manipulate this variable in the present study by the help of 'specific instructions'.

Formation of Hypotheses

While formulating the testable hypotheses to answer the research problems stated above, some of the operational properties of the dependent and that of the independent variables involved in the study were taken into consideration for selecting the premises given below :

(a) Positive drive (D_+) motivates individual to fixate on the attention-stimulus. Continued fixation leads to the growth of reactive inhibition (D_-). When $D_- = D_+$, fixation ceases and attention fluctuates.

(b) In extraverts reactive inhibition is strong. It generates quickly and dissipates slowly. The reverse is true for introverts.

(c) High level of neuroticism by virtue of greater drive reaches earlier to a point of satiation leading to early fluctuation than low level of neuroticism.

(d) Experimenter's 'specific instructions' to subject create the corresponding mental set in him and S_s behaviour subsequently changes accordingly.

On the basis of these premises the following hypotheses were derived in a deductive fashion :

1. Extraverts by virtue of their strong inhibitory potentials will show more fluctuations of attention than the introverts.
2. Individuals with high neuroticism scores by virtue of their greater drive leading to quicker satiation will show more fluctuations of attention than individuals with low neuroticism scores.
3. Subjects with high extraversion and high neuroticism scores (E_HN_H), by virtue of their strong reactive inhibution plus greater

drive will show more fluctuations of attention than the subjects with low extraversion and low neuroticism scores (E_LN_L).

4. If subject is instructed to excercise voluntary control over his normal (natural) fluctuations in attending, his fluctuations will be less under voluntary control condition than under normal (natural) condition, for a given period of time.

METHODOLOGY

In order to verify the aforementioned hypotheses empirically the following methodological steps were taken. The details of the same are reported below in their respective sections.

(a) *Experimental Design :* A 2x2x2 factorial design would have been the best suited as the independent variables involved in the hypotheses were to be varied atleast at two levels. However in the present study, it was felt necessary to control one of the most pertinent extraneous variables namely 'age', especially in view of the contradictory findings reported in the literature in connection with its influence on rate of reversal of ambiguous figures. To quote a few, KOHLER and WALLACH (1944) found rate to decrease with age whereas PIAGET and MORF (1958) found the reverse to be true. The course of action, under such circumstances, is to control such extraneous variable by building it right into the design as an independent variable. The advantage of this way of controlling an extraneous variable has been nicely pointed out by KERLINGER's (1966) subprinciple that runs as follows : 'An extraneous variable can be controlled by building it into the research design as an assigned variable, thus achieving control and yielding additional research information about the effect of the variable on the dependent variable and about its possible interaction with order independent variables.' (p. 285).

Therefore, in the present study an experimental design that is analogous to 2x2x2x2 factorial design was adopted by varying E,N, Age and mental set each at two levels. It is essential here to stress that the investigation undertaken, thus, was not completely of an 'ex post facto' nature Rather it was of a 'quise' nature as one of the independent variables viz mental set was purposefully (directly)

manipulated by exposing the same subjects to two different sets of instructions, whereas the other two independent variables viz : E & N and one added namely 'age' being beyond manipulative control were accepted and varied by selection of the desired values of them from a number of values that exist.

(b) *Tools :*

(i) *JEPI :* Since the hypotheses were framed in the light of the Eysenckian model of personality and the sample was to consist of school girls, in order to tap the desired levels of extraversion and neuroticism, EYSENCK's (1965) Junior Eysenck Personality Inventory (JEPI) was preferred. It is designed to measure extraversion and neuroticism in children ranging in age from 7 to 16 years. The inventory is a development of the MPI (EYSENCK 1959) and the EPI (EYSENCK and EYSENCK 1964) for adults. It has in all 60 items, of which 24 measure E ; 24 N and 12 constitute the lie sale for the detection of faking. Moreover separate age – wise norms for boys and girls are reported in the manual along with high realibility co-efficients (average between .70 & .80). Though too little is known about its validity it has been recommended by EYSENCK (1965) as a valid instrument for experimentation and research.

(ii) *Experimental task :* The Vase-profile Reversible figure has the property of figure and ground perspectives in the sense that if the white area is seen as the figure an object similar to a vase is perceived against the black back-ground and if the black area is seen as the figure, two profiles facing each other are perceived against white back-ground but not as both at once. CANDLAND (1968) pointed out its utility in studying the phenomenon of fluctuation by mentioning that 'once you have seen both figures you have little trouble in shifting your attention from one perception to the other' (p. 265). 'And MUNN (1956) by stating that' if one fixates at the centre, or any other part of either figure, it will be noticed that now one aspect stands out, now the other. At one movement, for example, you see the black figures as though on a white back ground, the next moment you may see the white figures as on a black background. The frequency of such figure-ground fluctuations can be influenced by trying to hold one as long as possible. The figure will very likely change less often.' Therefore, the vase-profile reversible stimulus

configuration was used as an experimental task to arrive at the measures on dependent variable involved in this study.

(c) *Sample :* The JEPE was first administered on a sample of 316 girls studying in IXth and Xth classes of the Local English Medium Girls Schools with an intention to tap E & N is the 12+ girls, because the author of the JEPI stated that 'N can be measured adequately at all these age levels (i.e. 7 to 16 years) but that as far as E is concerned either this is a personality dimension which is not clearly emerging until the age of 9 or 10, or its measurement by means of questionnaires presents unusual difficulty with the youngest age groups'. (p. 5). The age of the sample ranged from 13 to 16 years. Scoring was done according to the key provided together with the manual (EYSENCK 1965).

Further in order to know whether the dimension of E & N are independent and whether the data obtained from the present sample yielded similar inter-correlations to those reported in the manual, age wise inter-correlations were computed. The same are reported in a matrix form in the tables 1 through 5 below :

TABLE 1.

Inter-correlations between E, N & L at 13 years age level.[1]

	E	N	L
E		−.197	−.129
N	(−.061)		−.304
L	(−.241)	(−.325)	

TABLE 2.

Inter-correlations between E, N & L at 14 years age level.

	E	N	L
E		−.173	+.388
N	(−.039)		−.390
L	(−.144)	(−.335)	

1. Coefficients reported in the parentheses in tables 1 through 5 are the reported ones in the manual.

TABLE 3.

Inter-correlations between E, N & L at 15 years age level.

	E	N	L
E		−.151	−.095
N	(−.030)		−.229
L	(−.367)	(−.368)	

TABLE 4.

Inter-correlations between E, N & L at 16 years age level.

	E	N	L
E		−.463	−.015
N	(−.052)		−.096
L	(−.338)	(−.196)	

TABLE 5.

Comparison between obtained and reported averaged over inter-correlations between E, N & L.

	E	N	I.
E		−.187	−.094
N	(approx. −.15)		−.287
L	(approx. −.15)	(approx. −.3 to −.4)	

Since the obtained intercorrelations between E, N & L with a few exeeptions are in accordance with those reported in the manual, in the absence of Indian Norms of JEPI, it cannot be said emphatically that the observed divergences are on account of cultural differences. Therefore, for obtaining the relatively purer cases of E and N, the L scale norms (means) reported in the manual were used as the base for screening. As such the size of the initial sample of 316 girls was reduced to 103, from which it was thought reasonable to select such cases for experimentation that meet the requirements of research design suited to verify the hypotheses under consideration. The age-

wise distribution of relatively purer cases on E and N dimensions is reported in table 6.

TABLE 6.

Age-wise Distribution of the relatively purer cases.

Age	13	14	15	16	Total 103
n	11	46	39	7	

Further, in order to materialize one of the purposes of this study by studying the main and interaction effects of E,N and age, on fluctuation of attention, it was decided to vary each of them at two levels. The factors to be varied being organismic ones, and the availability of the realively purer cases on E and N dimensions at 13 and 16 age levels being meagre, the subjects posessing high and low values of E and N were selected from 14 and 15 age levels only. Moreover for getting adequate no. of cases possessing high and low values of E and N from 14 and 15 age levels the conventional criteria of Q_1 and Q_3 were relaxed to P 33.33 and P 66.66. The number of cases thus available in the high extravert high neurotic ($E_H N_H$) group were 6 from 14-year olds and 5 from 15-year olds ; in the low extravert-high neurotic ($E_L N_H$) group 11 from 14-year olds and 6 from 15-year olds ; in the high extravert-low neurotic ($E_H N_L$) group 7 from 14-year & 7 from 15-year olds ; and in the low extravert-low neurotic group ($E_L N_L$) 9 from 14-year olds and 5 from 15 year olds.

Initially it had been decided to have 5 cases in each cell of a 2x2x2 factorial design. In order to obtain this number extra cases in each cell were eliminated randomly – from those which were borderline ones with respect to P 33.33 and P 66.66 of both E and N. Following these procedures, finally a sample of 40 cases, each cell containing 5 was selected to study the phenomenon under consideration.

(d) *Procedure of data collection and scoring :* Each of the 40 subjects selected finally was tested individually under two different mental sets in her own school under laboratory like conditions as far as possible. Each subject was first shown the vase and the two profiles from a distance of 2 feet. Further for measuring her fluctuations in

attention under natural set the subject was instructed to look at the vase, and that whenever instead of seeing the vase she sees faces. She was to indicate it by tapping on the table. She was told not to lift her eyes from the reversible figure untill she was told to do so. This phase of the experiment was continued for a duration of 3 minutes. For measuring her fluctuations in attention under voluntary control set the subject was instructed to look at the vase and fixate and hold her attention forcefully on it. But despite her efforts, if she sees the faces she should indicate it as before. She was also told not to lift her eyes from the figure until she was told to do so. This phase of the experiment was also continued for a duration of 3 minutes. A rest of 10 minutes was given between the two phases of the experiment in order to nullify the influence of fatigue. Thus the data were collected on 40 girls in terms of number of fluctuations shown in a continuous duration of 3 minutes each under two different mental sets.

Further by assigning a numerial weightage of 1 for each fluctuation shown, a total fluctuation score was worked out for each subject, under two different mental sets (conditions) and were treated statistically.

Analysis and Interpretation

In the pages that follow, attempts have been made to give an information pertaining to the statistical treatment of data, the results obtained and the status of research hypothe es along with necessary reasoning and interpretation.

In order to see the main and interaction effects of E, N, age (A) and Mental Set (S) on fluctuation of attention, the use of 'two-way analysis of variance' was preferred. However to arrive at the sound inferences, it was thought necessary to verify first certain key assumptions underlying the 'analysis of variance'. As pointed out by Guilford (1956 p. 258) 'homogeneity of variance' in the dependant variable measures being one of the key assumptions, the simplest and the best statistical device suggested by Hartley was performed. The results of this test of hamogeneity of variance are reported in table 7.

The table values of F_{max} as given in table from Walker & Lev (1965) for 8 K and 4 df at .05 leve and at .01 level are 37.5 and

TABLE 7.

Hartley's test of Hamogeneity of Variance.

Mental Set	Maximum variance	Minimum variance	F_{max}
Natural	35.20	3.3	10.66 *
Voluntary Control	12.70	0.70	18.15 *

* F_{max} indicates homogeneity of variance.

89.00 respectively. Since the value of F_{max} reported in table VII for both sets of fluctuation scores is less even than the critical value at .05 level, it can be said that the results of HARTLEY's test indicates that homogeneity of variance prevails in the data and the scores on dependent variable deserve analysis of variance treatment.

Moreover, since in two-way analysis of variance the selection of an appropriate 'error term' to use it as a denominator in computing F ratio is the matter of utmost importance (FERGUSON 1971) and since this selection is largely governed by the nature of the obtained means (GARRETT 1961), it was felt necessary to examine how far the obtained means on dependent variable in this study are uncorrelated and/or correlated. As the subjects selected for experimentation in this study were possessing different values of E, N, and A and were tested under two different mental sets, the means representing the influence of different combinations of E, N and A (organismic variables) ought to be uncorrelated, whereas the means representing the influence of sets were likely to be correlated. Therefore, the product-moment coefficient of correlation of between 40 pairs of fluctuation scores obtained under two sets was worked out. The obtained r is 0.764, which is highly significant beyond .01 level. Thus the statistical evidence strongly suggests that while testing the main and interaction effects of E, N, A & S for significance through analysis of variance, the use of two error terms' namely (a) (to take case of the independent measures) and (b) (to take cognizance of the correlated means) would be most appropriate. Therefore, taking clues from EDWARDS (1968) a two-way analysis of variance suitable to yield (a) and (b) error terms was performed by arranging the data obtained under two sets in a single table – form as shown in table 8.

TABLE 8.

Fluctuation scores under two sets (s) for E, N and A (age) each at two levels.

E, N and A combinations	Subjects	Sets		Σ
		S_1	S_2	
E_1 N_1 A_1	1	11	6	17
	2	7	5	12
	3	4	0	4
	4	5	3	8
	5	1	0	1
E_1 N_1 A_2	1	10	5	15
	2	1	0	1
	3	2	1	3
	4	2	1	3
	5	0	1	1
E_1 N_2 A_1	1	3	3	6
	2	1	1	2
	3	8	2	10
	4	1	1	2
	5	3	2	5
E_1 N_2 A_2	1	3	1	4
	2	4	3	7
	3	6	5	11
	4	7	5	12
	5	7	4	11
E_2 N_1 A_1	1	7	3	10
	2	9	5	14
	3	8	4	12
	4	4	1	5
	5	3	1	4
E_2 N_1 A_2	1	11	1	12
	2	8	2	10
	3	11	7	18
	4	6	2	8
	5	4	0	4
E_2 N_2 A_1	1	14	4	18
	2	13	4	17
	3	12	7	19
	4	9	5	14
	5	7	3	10
E_2 N_2 A_2	1	22	10	32
	2	12	3	15
	3	12	7	19
	4	8	2	10
	5	7	2	9
	Σ	273	122	395

Using data from table 8 the total sum of squares was computed and partitioned first into three major components viz. subjects sum of squares, sets sum of squares and subject X set sum of squares. Then the subject sum of squares was partitioned into 7 such-components and the error term (a) was arrived at. And finally the subject X set sum of squares was partitioned into 7 sub-components and error term (b) was arrived at. The results of this sort of analysis of variance in summary form, are reported in table 9.

TABLE 9.

Two-way analysis of variance.

Source of variation	Sum of Squares	df	Mean Squares	F
E	195.32	1	195.32	12.85 **
N	63.02	1	63.02	4.15 *
A	2.82	1	2.82	–
EXN	46.50	1	46.50	3.06
EXA	2.10	1	2.10	–
NXA	19.00	1	19.00	1.25
EXNXA	19.03	1	19.03	1.25
error (a)	486.40	32	15.20	–
S	285.02	1	285.02	113.55 **
EXS	74.10	1	74.10	29.52 *
NXS	4.50	1	4.50	1.79
AXS	1.50	1	1.50	–
EXNXS	10.53	1	10.53	4.19 *
EXAXS	5.53	1	5.53	2.20
NXAXS	0.13	1	0.13	–
EXNXAXS	2.79	1	2.79	1.11
error (b)	80.40	32	2.51	–
TOTAL	1298.69	79		

** Significant beyond .01 level ; * Significant at .05 level.

The first five values of F that have been entered in the table 9 were obtained by dividing each of the corresponding mean squares that is to be tested for significance by the error (a) mean square, it being appropriate to take care of the uncorrelated fluctuation scores. Thus each of the first five F ratios in table is based on 1 and 32 df. No value of F was calculated for the A, and NXA interaction because

these mean squares are obviously not significantly larger than the error (a) mean square. And the last six F values reported in the same table were obtained by dividing each of the corresponding mean squares that is to be tested for significance by the error (b) mean square, it being appropriate to take care of the correlated scores. Thus each of the last six F_s in the table is based on 1 and 32 df. No value of F was calculated for the AXS and EXAXS interactions as these mean squares are obviously smaller than the error (b) mean square.

The main effects

The tabled values of F .95 and F .99 as given by EDWARDS (1968, p. 424) for 1 and 32 df are 4.15 and 7.50 respectively. Since the obtained value of F for E is 12.85, much more than is expected on the basis of chance, it is statistically significant beyond .01 level. This obviously means that the main effect of E-I factor on fluctuation of attention is significant. Further in the light of the corresponding data given in the adjoining table it can be said that when

	E_1	E_2
Σ	135	260
n	40	40
M	3.375	6.50
Md	3.125	

averaged over the level of N, A and S the mean fluctuations of E_1 (introverts 3.375) and that of E_2 (Extraverts 6.50) differ significantly, and since the difference of 3.125 between them is in favour of E_2 (Extraverts) it can be said that the first hypothesis under consideration viz. 'extraverts will show more fluctuations than introverts' gets confirmation.

The obtained F for N is 4.15. Since it exactly matches to the one reported in the table of F ratio at .05 level, the obtained one is statistically significant at .05 level only. This statistical finding if viewed in the light of the data reported in the adjoining table leads

	N_1	N_2
Σ	162	233
n	40	40
M	4.05	5.82
Md	1.77	

to infer that when averaged over the levels of E, A and S, the mean fluctuations of N_1 (low neurotics 4.05) and that of the N_2 (high neurotics 5.82) differ significantly. Moreover since the difference of 1.77 between these means is in favour of high neurotics (N_2) it can be said that the second hypothesis under consideration viz : 'individuals with high neuroticism scores will show more fluctuations than individuals with low neuroticism scores' is tenable.

As the obtained F for S is 113.55, much more than the reported one in the table of F ratios, it is highly significant beyond .01 level. It means that S has profoudly influenced the fluctuations in attending. On the basis of this finding and the corresponding data reported in the adjoining table, it can be inferred that when averaged over the

	S_1	S_2
Σ	273	122
n	40	40
M	6.82	3.05
Md	3.77	

levels of E, N and A, the mean fluctuations in attention (6.825) under natural condition and the mean fluctuation (3.05) under voluntary control set differ markedly. And since the difference of 3.77 is in favour of natural condition it can be said that the forth hypothesis viz : – fluctuations will be less under voluntary control condition than under natural condition for a short period of time has been confirmed by the data.

The two-factor Interaction effects

The F of 3.06 for E X N interaction is obviously insignificant as it is much less than one reported at .05 level. The fact that this interaction effect of E & N on fluctuation scores is not significant if viewed in the light of the corresponding data reported in the adjoining two-way table indicates that the difference between the means of E_1 (Introverts 3.25) and E_2 (Extroverts 4.85) for the first level of N (i.e. low neuroticism) is not significantly different from the difference between the means of E_1 (introverts 3.50) and E_2

		E_1	E_2
N_1	Σ	65	97
	n	20	20
	M	3.25	4.85
N_2	Σ	70	163
	n	20	20
	M	3.50	8.15

(Extroverts 8.15) for the second level of N (i.e. high neuroticism). Therefore, it can be inferred that though E & N have influenced fluctuation scores separately, their joint effect was not observed beyond statistical doubts. Since the F ratios for EXA and NXA are very negligible it can be said, therefore, that fluctuation scores have been least affected by the joint effects of either E and A or N and A though E and N have influenced them separately.

However, the F of 29.52 for EXS interaction is highly significant beyond .01 level. And if viewed in the light of the corresponding data reported in the adjoining table, it indicates that the difference of 5.05 between the means of E_1 (introverts 4.30) and E_2 (Extraverts 9.35) under S_1 (natural set) and the difference of 1.20 between the means of E_1 (introverts 2.45) arnd E_2 (Extraverts 3.65) under S_2 (voluntary set) are not comparable at all. In other words, the magnitude of the difference between the fluctuations in attention of introverts and extroverts is not the same, within the limits of random variation under natural and voluntary control conditions. In this

		E_1	E_2	Md
S_1	Σ	86	187	
	n	20	20	
	M	4.30	9.35	5.05
S_2	Σ	49	73	
	n	20	20	
	M	2.45	3.65	1.20
Md		1.85	5.70	

connection it is to be especially noted that it is the S_2 (voluntary control set) that has interacted significantly with E-I dimension of personality by influencing Introverts '(E_1) and Extraverts '(E_2) natural fluctuations in attending disproportionately. In a nut shell, the difference of 1.85 between the means of E_1 (introverts) under natural (S_1) and voluntary control (S_2) conditions and the difference of 5.70 between the means of E_2 (extroverts) under natural (S_1) and voluntary control (S_2) conditions are of vital importance, for if these mean differences between the introverts' and extroverts' fluctuations are plotted along with the E_1 and E_2 means under S_2 (voluntary control condition) then and then only the interaction between E and S can can be said that though voluntary control over attention affects (minimizes) the natural speed of fluctuation of attention of both extroverts and introverts, it affects (minimizes) extroverts' natural fluctuations more significantly than that of the introverts. Thus it may be inferred that extraverts are better than introverts in exercising voluntary control over their fluctuations in attention for a short period of time.

The F for N x S being insignificant, in the light of the corresponding two-way table given below, it can be said that though S_2 (voluntary control) has influenced the natural fluctuations of N_1 and N_2, but its influence on low neurotics' and high neurotics' fluctuations is by and large equal. Similar explanation can be offerd for the insignificant A x S interaction.

		S_1	S_2	Md
N_1	Σ	114	48	
	n	20	20	
	M	5.70	2.40	3.30
N_2	Σ	159	74	
	n	20	20	
	M	7.95	3.70	4.50
Md		2.25	1.30	

The three-factor Interaction effects

The E x N x A interaction mean square is not significant as the F for this interaction is 1.25 only. Therefore it can be said that E, N and A have jointly failed to influence the phenomenon under consideration. However the F for ExNxS interaction is 4.19 which is statistically significant at .05 level. Therefore in the light of the corresponding two-way table given below it can be said that it is the S_2 (Voluntary control set) that has interacted differentially to a significant level, with various combinations of E and N. Further on

		S_1	S_2	Md
E_1N_1	Σ	43	22	
	M	4.3	2.2	2.1
E_1N_2	Σ	43	27	
	M	4.3	2.7	1.6
E_2N_1	Σ	71	26	
	M	7.1	2.6	4.5
E_2N_2	Σ	116	47	
	M	11.6	4.7	6.9

n = 10 in each cell.

the basis of the magnitude of the mean differences it may be inferred that the natural fluctuations of the extraverts + high neurotics have been reduced largely by voluntary control than those of the introverts + low neurotics ; introverts + high neurotics and extraverts + low neurotics. Moreover it can also be inferred remotely that the mean difference of 7.3, between means of the E_1 N_1 (4.3) and the E_2 N_2 (11.6) under natural condition and the mean difference of 2.5 between means of the E_1 N_1 (2.2) and the E_2 N_2 (4.7) under voluntary control condition are statistically significant. And since both the mean differences are in favour of the E_2 N_2 it may be said that the research hypothesis number three viz : 'high extroverts + high neurotics will show more fluctuations than the low extraverts + Low neurotics' is tenable.

The four-factor Interaction effect

Since the F of 1.11 for E X N X A X S is markedly insignificant, it can be said that these four factors when taken together have not influenced the dependent variable measures to the great extent.

TABLE 10.

Analysis of variance of the data obtained under two mental sets.

	Natural Condition				Voluntary Control Condition			
Source of variance	Sum of Squares	df	Mean Square	F	Sum of Squares	df	Mean Square	F
E	255.02	1	255.02	20.15*	14.40	1	14.40	2.84
N	50.62	1	50.62	4.00	16.90	1	16.90	3.34
A	4.22	1	4.22	–	0.10	1	0.10	–
E X N	50.63	1	50.63	4.00	6.40	1	6.40	1.27
E X A	7.23	1	7.23	–	0.40	1	0.40	–
N X A	11.03	1	11.03	–	8.10	1	8.10	1.60
E X N X A	18.22	1	18.22	1.44	3.60	1	3.60	–
Within (error)	404.80	32	12.65	–	162.00	32	5.06	–
TOTAL :	801.77	39			211.90	39		

* Significant beyond .01 level.

Since the findings reported in table 9 and discussed above are based upon the total fluctuation scores of the subjects obtained under natural and voluntary control conditions, it was thought interesting to see how E, N and Age have influenced fluctuation scores condition (set)-wise. Therefore, the fluctuation scores obtained under each mental set were put separately to analysis of variance treatment. The results are depicted in table 10.

Table 10 indicates that under natural condition, the main effect of E is highly significant. Therefore in the light of the corresponding fluctuation scores reported in the adjoining table, it can be said that extroverts show more fluctuations than introverts under natural condition and the main effect of E-I dimention of personality on fluctuations in attending is in accordance with the first research hypothesis and also in accordance with the inference drawn previously on the basis of the F for E reported in table 9.

	E_1	E_2
Σ	86	187
n	20	20
M	4.30	9.35
Md	5.05	

However, as the F of 2.84 for E under voluntary control set is statistically insignificant it cannot be said that the first research hypothesis is tenable under this mental set too. On the contrary this insignificant F if viewed in the light of the corresponding data reported in the adjoining table, suggests that though the natural tendency of extroverts to show more fluctuations in their attending behaviour than introverts is reflected under this set too, yet such reflection being very insignificant it can be inferred that inspite of their natural tendency for more fluctuations in attending, extroverts under voluntary control set stand with introverts on the common platform for a period of 3 minutes as far as their fluctuations in attending are concerned. Thus it can be said that this inference tallies to the greater extent with the one arrived at previously on the basis of the significant F for EXS interaction reported in table 9.

	E_1	E_2
Σ	49	73
n	20	20
M	2.45	3.65
Md	1.20	

The F of 4.00 for N under natural condition being insignificant it can be said that its main effect on fluctuations in attending under this condition has not been observed as per prediction of the second research hypothesis. Therefore, the inference drawn previously on the basis of F for N reported in table 9 is of doubtful standing. However if the influencing potential of N is viewed in the light of the entries reported in the adjoining table it can be said that under natural

	N_1	N_2
Σ	114	159
n	20	20
M	5.70	7.95
Md	2.25	

condition, subjects with high neuroticism scores showed more fluctuations in attention than the S_s with low neuroticism scores though the mean difference of 2.25 in favour of N_2 is statistically insignificant. Thus the inference drawn previously on the basis of F for N reported in table 9 gets partial support only.

As the F of 3.34 for N reported in table 10 under voluntary control condition is insignificant, in the light of the data corresponding to its effect given in the adjoining table, it can be said that though high neurotics reflected their tendency for showing more fluctuations in attending than low neurotics under voluntary control condition too, yet such reflection being very slight it can be inferred that both high and low neurotics have exercised voluntary control on their fluctuations in attending with more or less equal efficiency for a duration of

3 minutes. Thus it tallies with the inference drawn previously on the basis of the F for NXS interaction reported in table 9.

	N_1	N_2
Σ	48	74
n	20	20
M	2.4	3.7
Md	1.3	

The F ratios reported in table 10 for A, EXN, EXA, NXA and EXNXA under both the conditions (sets) are statistically insignificant. And since their corresponding F ratios reported previously in table 9 are also insignificant it can be said that the main effect of A(Age) and the interaction effects of E-I, N and A on fluctuations in attention were not observed beyond statistical doubts.

Further, it was felt that the statistical findings reported and discussed hither-to are in a position to throw enough direct light on the status of all research hypotheses under consideration except the

TABLE 11.

The results of 't' test.

Sets	Natural		Voluntary	
Levels	$E_H N_H$	$E_L N_L$	$E_H N_H$	$E_L N_L$
n	10	10	10	10
M	11.60	4.30	4.70	2.20
Md	7.30		2.50	
SE_{Dm}	1.86		1.10	
t	3.92**		2.27*	

** Significant beyong .01 level ; * Significant at .05 level.

third one. Therefore, the mental-set wise difference between the fluctuation scores of E_H N_H and E_L N_L S_s was tested for significance by running a 't' test applicable to the uncorrelated means. While doing so the fluctuation scores of 14 and 15 year-old girls were put together as the main and interaction effects of this factor observed in this study are insignificant. The results of 't' test are reported in table 11.

The values of t for 18 df under one-tailed test of significance as given in GARRETT (1961) at .01 level and at .05 level are 2.55 and 1.73 respectively. Since the obtained t of 3.92 is obviously greater than 2.55, it can be said that it is significant beyond .01 level under one-tailed text of significance. Similarly since the obtained t of 2.27 is greater than 1.73 it can be said that it is significant at .05 level under one-tailed test of significance. Moreover as the mean difference of 7.3 and 2.5 obtained under natural and voluntary set respectively, are in favour of E_H N_H subjects it can be inferred explicitly that the 'S_s with high extroversion + high neuroticism scores have shown more fluctuations in attention than the S_s with low extroversion + low neuroticism scores under both the sets'. Thus the results of the 't' test support the previous inference drawn remotely on the basis of the F for EXNXS interaction reported in Table 9 and also provide a firm ground to say that the third research hypothesis is true.

Comments on the status of Research Hypotheses

In the light of the statistical findings reported above the following theoretical comments can be advanced to evaluate the status of the research hypotheses verified in this study.

The first hypothesis (viz : 'extroverts by virtue of strong inhibitory potentials will show more fluctuations than the introverts') has been confirmed when their natural fluctuations in attention were measured. Therefore, the deduction arrived at on the basis of the Eysenckian postulates dealing with the neurological difference between Extroverts and Introverts seems sound and acceptable in accounting for the individual differences in natural fluctuations in attention of the extrovert and introvert girls of 14 and 15 years age.

The second hypothesis (viz individuals with high neuroticism scores by virtue of their greater drive leading to quicker satiation

will show more fluctuations than individuals with low neuroticism scores) has been partially supported in the sense that when their fluctuations under natural set were tapped the hypothesized trend was observed. Hence it seems that the deduction arrived at on the basis of differences in drive level is suitable and acceptable to some extent in explaining the differences between high and low neurotics' fluctuations in attention.

The third hypothesis (viz. S_s with E_H N_H scores by virtue of their strong reactive inhibition and greater drive will show more fluctuations of attention than the S_s with E_LN_L scores) has received empirical confirmation under both natural and voluntary control conditions. Thus it seems that the explanation offered in terms of reactive inhibition and drive level is sound enough to explain the differences in fluctuations of attention of E_H N_H and E_L N_L girls of 14 and 15 years age. And the findings supporting this hypothesis tally to the greater extent to those reported by SINGH *et al.* (1961).

The fourth hypothesis (viz : if S is instructed to excercise voluntary control over his natural fluctuations in attending, his fluctuations will be less under voluntary control condition than under natural condition for a short period of time) has been profoundly supported by the empirical data and its verification has revealed certain interesting facts regarding the fluctuating behaviour of the extroverts and introverts under natural and voluntary control conditions. The outstanding one is as under : It is the extroverts that have curbed their natural fluctuations in attention more drastically than the introverts under voluntary control conditions for the duration of 3 minutes. It is interesting enough in that, it compels one to infer that inspite of their natural tendency to show more fluctuations in attention, the extroverts are better in exercising voluntary control than introverts over their natural frequency of fluctuations for a short period of time. This may be on account of their stronger desire to follow the instructions in toto given by the experimenter and thus show sociability (confirmity) than that of the introverts.

Conclusions

This piece of research led to the following conclusions :

1. The natural fluctuations in attention are significantly more in the extravered girls than the introverted girls of 14 and 15 years age, and the explanation given interms of neurological differences steming from Eysenckian personality theory between extroverts and introverts is sound enough.

2. Girls with high neuroticism scores showed insignificantly more fluctuations in attention under natural set than the girls with low neuroticism scores. Thus, the second research hypothesis in this study received partial support and the explanation given interms of differences in drive level of high and low neurotics is weakly tenable.

3. Girls high on E and N showed significantly more fluctuations in attention than those low on E and N under natural as well as voluntary control set. Thus the third research hypothesis got confirmation and the explanation given in terms of reactive inhibition and drive levels stood trustworthy.

4. Fluctuations in attention are significently less under voluntary control set than under the natural one for a short period of time. Thus the fourth hypothesis is confirmed indicating that the instructions given by the Experimenter are really potential enough to excercise their influences upon the phenomenon studied in this piece of research.

5. Though fluctuation of attention was greater in extroverts than introverts, the former were significantly better in exercising voluntary control over their natural fluctuations than the latter for a period of 3 minutes. These facts lead to conclude that extroverts are better than introverts in controlling their natural fluctuations for a short period of time. It may be so on account of their stronger desire for sociability (Confirmity).

6. A correlation of .784 between the fluctuations in attention under natural and voluntary control sets, indicates that at least 61 % of the variance can be explained in the light of the mental set as created by the instructions.

7. Age has failed to show its influence upon fluctuations in attention indicating that it was effectively controlled in this study.

Suggestions for further Research

Since the present study dealt with a sample drawn from girls population, it would be an interesting and exploratory attempt to replicate this study on a sample drawn from boys population, to see how far the factor of sex contributes in influencing the phenomenon of fluctuations in attending. The use of the original JEPI to tap the desired values of E & N in the Indian girls on the basis of P 33.33 and P 66.66 may be regarded as a limitation of the present study : Therefore it would be more fruitful to see especially whether the second hypothesis along with other hypotheses verified here get fuller confirmation if Indian adaptation of JEPI is used and the criterion of Q_1 and Q_3 is followed to tap high and low levels of E and N. With an intention to control the age factor in the present study, it was not varied too apart as such it might have failed in exhibiting its influence on fluctuations in attending beyong chance. Therefore, it is suggested that a separate study may be conducted to assess its influence on the phenomenon by maximizing systematic variance of this factor. In the present study fluctuations of attention were measurred by simply counting the signals (tappings) given by the S to that effect, therefore, it is suggested to replicate the study using more sophisticated instruments like kymograph for achieving refinement and precision in the measurement of fluctuations in attention. In the present study as the extroverts are found to exercise greater voluntary control over their natural fluctuations in attending than the introverts for a period of 3 minutes, it would be interesting to see how far variations in time to exercise voluntary control over natural fluctuations in attending, interact with E and N dimensions of personality.

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SUMMARY

Inspite of the theoretical and practical importance of the phenomenon of attention, it has been observed that little work has been done to understand it in general, and its salient features in particular in the light of individual's personality. Therefore in the present study an attempt was made to study a special feature of attention namely 'fluctuations in attending' as a function of extroversion, neuroticism and mental set (as induced by specific instructions). To do so, it was hypothesized in a deductive fashion from the Eysenckian theory of personality that (1) extroverts by virtue of their strong inhibitory potentials will show more fluctuations in attending than the introverts ; that (2) individuals with high neuroticism scores by virtue of their greater drive leading to quicker satiation will show more fluctuations of attention than individuals with low neuroticism scores ; that (3) S_s with high extroversion and high neuroticism (E_HN_H) scores by virtue of their strong reactive inhibition coupled with greater drive will show more fluctuations of attention than the S_s with low extroversion + low neuroticism (E_LN_L) scores ; that (4) if S is instructed to exercise voluntary control over his natural fluctuations in attending, his fluctuations will be less under voluntary control condition than under natural condition, for a short period of time.

For the verification of these hypotheses and to control one of the most pertinent extraneous variable namely age, by building it into the research design itself, the original JEPI (Junior Eysenck Personality Inventory) was administered on a sample of 316 English Medium High School girls ranging in age from 13 to 16 years. Further the norms provided in the manual for the lie scale were used as the base for screening and obtaining age-wise purer cases of E and N dimensions of personality. Thus the original size of the sample was reduced to 103 from which 40 girls meeting the requirements of P33.33 and P66.66 cutting scores and that of a 2-level factorial design were finally selected. Out of these 40 girls, 4 groups of 5 girls in each were from 14-year age level and 4 groups of 5 in each from 15-year-age level, differing in their personality composition such as high extroversion + high neuroticism ; high extroversion + Low neurotivism ; low extraversion + high neuroticism and low extraversion + Low neuroticism.

These 40 girls then were individually exposed to the vase-profile reversible figure in order to measure their fluctuations in attending under the natural and voluntary control sets successively for a period of 3 minutes each, with a rest of 10 minutes in between. The mental sets were created by giving specific instructions to the subject and the measurement of fluctuations in attending was done by simply counting the signals (tappings) given by the subject to that effect. By assigning a numerical weightage of 1 for each fluctuation shown, a total fluctuation score was worked out for each subject. The total fluctuation scores of 40 girls obtained under two different mental sets (conditions) were finally put to statistical analysis, that led to the following

conclusions: (1) As predicted in the first hypothesis, the extroverted girls showed significantly more fluctuations in their attention than the introverted girls under natural set. Thus the explanation stemming from Eysenckian theory of personality in terms of neurological differences between extroverts and introverts receives sound support (2) Girls with high N scores showed insignificantly more fluctuations in attention under natural set than the girls with low N scores. Thus the second research hypothesis is partially confirmed and the explanation given in terms of differences in drive level of high and low N scorers is tanable. (3) As girls with high E and N showed significantly more fluctuations in attention than those low on both, under natural as well as voluntary control conditions, it can be said that the third hypothesis is confirmed and the deductions based upon reactive potentials and drive levels are sound enough. (4) As predicted in the fourth hypothesis the fluctuations of attention are significantly less under voluntary control set than under the natural one for a short period of time (3 M_s). (5) Though fluctuations of attention are greater in the extroverts than in the introverts, the former are significantly better in exercising voluntary control over their natural fluctuations than the latter for a short period of time. It may be so on account of their greater desire for following the instructions in toto and thus show social conformity than those of the introverts. (6) A correlation of .784 between measures of fluctuations under natural and voluntary control sets, indicates strongly that about 61 % of the variance can be explained in the light of the mental set (as induced by the instructions) of the S_s. (7) Age has failed to show any noticable influence upon the measures of fluctuations in attention, as such it can be said that it was effectively controlled in this study.

RÉSUMÉ

Les fluctuations de l'attention comme une fonction de l'extraversion, du neurotisme et de la condition neutrale.

Malgré l'importance théorique et pratique du phénomène de l'attention, on a constaté que peu de travaux ont été exécutés pour comprendre l'attention en général, et ses aspects principaux en particulier, à la lumière de la personnalité de l'individu.

Pour cela nous avons fait, dans l'étude présente, une tentative d'étudier un trait de l'attention, notamment „les fluctuations dans l'attention" comme fonction de l'extraversion, du Neurotisme et de la condition neutrale (comme provoqués par des instructions spécifiques). A cette fin, on a posé l'hypothèse d'une manière déductive depuis la théorie de Eysenck de la personnalité, disant que (1) les extraverts, en vertu de leurs potentiels inhibitoires puissants montreront plus de fluctuations dans leur attention que les introverts ; (2) que les individus ayant de hauts scores de neurotisme en vertu de leur plus grand élan les poussant à une satiation plus rapide, montrent plus de fluctuations à l'attention que des individus en scores de neurotisme plus bas ; (3) que les S_s à forte extraversion et fort neurotisme (E_HN_H) en vertu de leur inhibition

réactive puissante, jointe à un élan plus fort montreront plus de fluctuations d'attention que les S_s au scores bas d'extraversion et de neurotisme (E_LN_L). (4) que si S a appris à exercer du contrôle volontaire que sur des fluctuations naturelles l'attention, ses fluctuations seront moins fortes sous des conditions de contrôle volontaire que sous des conditions de contrôle naturel, pour une courte période de temps.

Pour vérifier ces hypothèses et pour contrôler une des variables externes les plus pertinentes, notamment l'âge, en l'intégrant dans le plan de recherche même, le JEPI (Junior Eysenck Personality Inventrory) originel a été administré sur un échantillon de 130 filles du « English Medium High School », variant d'âge entre 13 et 16 ans. Puis les normes pourvues dans le manuel pour l'échelle « mensonge » ont été employées comme base pour sélecter et obtenir des cas plus purs selon l'âge de dimensions de personnalité de E et de N. Ainsi le nombre originel de l'échantillon a été réduit à 103 dont 40 filles remplissants les conditions, de P.33.33. à P.66.66 cutting schores, et on a finalement selecté un échantillon de filles a double niveau factoriel.

De ces 40 filles, 4 groupes de 5 filles du niveau de 15 ans, étant différents dans la composition de leur personnalité, tels que forte extraversion + faible neurotisme, faible extraversion + fort neurotisme, et faible extraversion + faible neurotisme. Ces 40 filles furent alors exposées individuellement à la « vase profile reversible figure » afin de mesurer les fluctuations de leur attention, sucessivement sous contrôle naturel et contrôle volontaire, pour une période de 3 minutes chaque fois, avec entre les deux, un repos de 10 minutes. Ses « mental sets » ont été donnés par des instructions spécifiques aux sujets et la mensuration des fluctuations dans l'attention était exécutée en comptant simplement les signaux (tappings) donnés par les sujets à cet effet.

En attribuant une mesure numérique de 1 à chaque fluctuations observée, un score total de fluctuations était exécuté pour chaque sujet. Les scores totaux des 40 filles obtenus sous deux différents mental sets (conditions) ont été finalement soumis à une analyse statistique, qui menait à la conclusion suivante : 1) Comme prévu dans la première hypothèse, les filles extravertes montraient de manière significative plus de fluctuations dans leur attention sous le mental set naturel, que les filles introvertes. Ainsi l'explication dérivant de la théorie de la personnalité de Eysenck en termes de différences neurologiques entre extraverts et introverts obtient un appui solide. 2) Des filles ayant de hauts scores N montraient de manière non-significative plus de fluctuations dans l'attention en condition mentale naturelle que les filles à scores bas. Ainsi la seconde hypothèse de recherche est partiellement confirmée et l'explication donnée en terme de différences en niveau d'élan entre haut et bas N scores est tenable. 3) Comme les filles à haut E et N montraient de manière significative plus de fluctuations en attention que celles à scores bas pour les deux, sous conditions de contrôle volontaire, on peut dire que la troisième hypothèse est confirmée et que les déductions basées sur les potentiels réactifs et les niveaux d'élan sont assez solides. 4) Comme prédit dans la quatrième hypothèse les fluctuations de l'attention sont significativement

moindres sous conditions de contrôle volontaire que sous conditions de contrôle naturel pour une courte période de temps (3 M_s). 5) Quoique les fluctuations d'attention soient plus fortes chez les extraverts que chez les introverts, les premiers sont significativement meilleurs dans l'exercice du contrôle volontaire sur leurs fluctuations naturelles que les derniers pour une courte période de temps. Cela est possible vu leur plus grand désir à suivre les instructions « in toto », montrant ainsi une conformité sociale plus grande que celle des introverts. 6) Une corrélation de 784 entre mesures de fluctuations sous conditions de contrôle naturel et volontaire indique fortement que environ 61 % de la variance peut être expliqué à la lumière de la condition mentale (comme induite par les instructions) des S_s. 7) Lâge a manqué de montrer quelque influence notable sur les mesures des fluctuations de l'attention et ainsi on peut dire qu'il à été tenu effectivement sous contrôle dans cette étude.

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QUALITY CONTROL FOR EVALUATION SYSTEMS BASED ON OBJECTIVE-REFERENCED TESTS

by

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INTRODUCTION

This paper presents a method of quality control that is intended to ensure that reliable and valid instruments will be used as part of an evaluation system. The paper is only concerned with objective-referenced measures that are developed for evaluation of specific educational programs. An assumption has been made that objective-referenced tests tend to be more appropriate measuring devices for the evaluation of specific educational outcomes than the more commonly used norm-referenced tests.

The paper is organized in the following fashion. First, the need for evaluation and reliable and valid instruments are discussed. A brief history of objective-referenced tests and their use in evaluation is then presented. Finally, three sections of the paper are devoted to delineating a methodology for producing quality test items that measure specific performance objectives. The methodology evolved over a number of years through work with the University of Oregon, the Michingan Department of Education, the National Assessment of Educational Progress, and the Michigan Middle Cities Consortium.

For the purposes of this paper, a good evaluation system has been defined as one which provides appropriate information for decision making. The decisions can be made at many levels of specificity – individuals pupils, classrooms, schools, districts, states, or a national perspective. The components of the foundations of accurate decisions are the questions posed, the design employed and the instruments

used to collect the data. If the instrument is not reliable and valid, any decisions made on the basis of such data are likely to be erroneous.

A brief explanation of what is meant by objective-referenced evaluation will be presented at this point because the concept is necessary for understanding why a quality control system must be applied to developing objective-referenced tests. Objective-referenced tests are most useful evaluation tools when they are used in a pretest – teach – posttest mode. The pretest is used to determine whether a child needs instruction on a given objective or small subset of objectives. If a child scores low on the pretest, this is an indication that instruction covering that objective is needed. After instruction, a posttest is given to determine if the objective was mastered. The concept of a system. involving the administration of a pretest and a posttest which are tied to instruction, is critical to all item development activities which lead to objective-referenced tests.

The development and use of objective-referenced tests received major impetus from the work done in the National Assessment of Educational Progress Study (NEP) (FINLEY and BERDIE, 1970; WOMER, 1970). NAEP developed instruments that were designed to measure specific educational objectives that were deemed important in determining the status of U.S. education. These instruments were entitled 'criterion-referenced', but the authors of this paper prefer to call them objective referenced. Objective-referenced is a more descriptive phrase than criterion-referenced because the key element – objectives – is emphasized rather than the arbitrarily setting a given criterion level.

The quality control system presented in this paper is intended for and has been tried with educators in local educational systems that have little formal training in psychometrics. Some of the concepts presented in this paper are original and somehwat technical – – such as the technique of computing reliability coefficients for objective-referenced tests (SCHOOLEY and BENJAMIN, 1974). However, it has been found that after some inservice, educators without psychometric training can comprehend and implement all of the concepts in this paper.

The system begins at a point in item development that assumes no sophistication in test development on the part of local educators and progresses to a point where reliability coefficients and indices of

sensitivity to instruction must be computed. The model is divided into three sections which are roughly equivalent to three school years. As people work with and proceed through the various steps in the model, they become more proficient in terms of test development. More sophisticated personnel could work quickly through the initial steps and probably complete most of the model in one or two years.

Section One

Performance Objectives

The key element in the production of high quality objective-referenced tests is the development of a hierarchy of specific performance objectives. It is acknowledged that there will probably never be a 'perfect' hierarchy of objectives, i.e., a set of objectives in which a child must master one objective before being able to master the next objective. It is assumed, however, that the performance objectives will be built around logical instructional sequences which tend to start at a low level of difficulty and progress to a more complex level – thus, a general hierarchy of objectives that follows the instructional sequence is produced. A consensus on the part of teachers and curriculum specialists will be considered as evidence that a hierarchy of objectives exists. Many excellent manuals exist on writing performance objectives (Mager, 1962 ; Popham, 1969) ; so the specific components of a good performance objective will not be presented in this paper. However, two essential activitie for developing quality objective-referenced tests will be discussed.

The first essential activity is the involvement of at least five groups in the original writing of performance objectives – – teachers so that there will be a commitment to teach the objectives ; parents so that there will be support for what will be taught their childern ; administrators so that there will be a commitment to provide the resources necessary to properly teach the objectives ; curriculum specialists so that the best expertise in a particular discipline will be involved in suggesting the hierchical sequence of the objectives ; and students so that there will be a test of the appropriateness of the objectives.

Historically, the writing of performance objectives was usually done by a separate group of people at a time separate from the writing of items to measure those objectives. As groups that contained different people than the original creators of the performance objectives began to write items to measure the objectives, many difficulties were encountered. The major recurring difficulty was that the item writers could not agree on the substance of the objective. Stated in other terms, the objectives lacked the degree of specificity that is necessary to write a set of items to measure the objectives. Hence, a second essential in developing quality tests is the involvement of the same group in both the writing of performance objectives and then corresponding test items. It has been found that the most effective method of ensuring that the objectives are meaningful and have a desirable level of specificity is to suggest that at least one test item, and preferably four, be written for each performance objective at the time the group agrees the objective belongs in the instructional sequence. The group should reach consensus that the item(s) are measuring the objective. If consensus cannot be reached, then the item(s) and/or the objective must be rewritten. A word of explanation should be inserted at this point to explain the different strategies involved in developing one item or four items to measure a given objective at the time the objective is written. Some groups have found it effective to initially write only one prototype item. After all of the objectives and their corresponding single items are completed, they then go back and write three new items that are similar to the prototype. Other groups prefer to write all four items that might measure a give objective, reach agreement on the items and objective, then move on to the next objective. The authors and most item writing groups prefer the later trategy. It should be noted that four or more items are being suggested at this time because current information suggests that reliability estimates based on less than four items produce unstable results. A separate paper is being developed to further examine this issue.

Item Development

Once agreement has been reached on the hierarchy of objectives and at least one and preferably four test items have been written for

each objective, it is time to begin refining the items so that they will become technically sound.

It is beyond the scope of this paper to list the generally accepted suggestions for good item writing. Lists of suggestions can be found in most introductory measurement texts (EBEL, 1972 ; MEHRENS and LEHMANN, 1973). It is suggested that multiple-choice items be developed wherever possible because this type of item produces a more reliable test for less cost than tests with other item types when one considers the costs of developing, reproducing, and scoring essay or other open-ended types of items. However, the quality control system presented in this paper is applicable to other item types, and writers are encouraged to use other types of items when they are appropriate. The effects of guessing are analyzed for each of the various item types. For the multiple choice items, the probabilities of guessing a given number of items when four option or five option multiple choice type items are discussed. The goal of this discussion is to help guide the item writers in selecting a criterion level for their tests that will minimize the probabilities of achieving the criterion by guessing. In other words, if there are four items that measure a given objective, how many of those four items should a student get correct before an instructor is willing to consider that the student has mastered the objective.

Table 1 is used as a device to help facilitate the process of selecting an acceptable criterion level. It also is useful in helping the item writers to determine whether they want to use four option or five option multiple choice formats. The table is read in the following fashion :

(1) given a four option, multiple choice test, if there are four items in the test, the probability of getting two items out of the four correct by guessing is .21 (in other words, 21 times out of 100 chances, people would correctly guess the answers to two out of the four items).

(2) given a five option, multiple choice test, if there are four items in the test, the probability of getting two of the four items correct by guessing is .15.

TABLE 1.

*Probability of Guessing Correctly Two, Three, or Four Items in a Four Option or Five Option Multiple Choice Test *.*

	Four Option, Multiple Choice				Five Option, Multiple Choice		
	Items Correctly Guessed				Correctly Guessed		
		2	3	4	2	3	4
Number of Items	2	.12			.04		
	3	.14	.02		.10	.008	
	4	.21	.05	.004	.15	.03	.002

* This Table was modified from Tables prepared by HUYSER, 1974.

After discussing the trade-offs involved in using a four option or a five option format, and in changing the criterion level from two items corect out of four, three of four items, or four of four, the item writers are urged to select a format and criterion level. It is of some interest to note that most groups select the four option format for items and consider a student as having mastered the objective when three out of four items are answered correctly (probability = .05 ; thus, only about five out of one hundred times would someone get that score by chance).

After the group has decided on the item format, the criterion level, and has written at least four items per objective, the items are administered to students on a per objective basis in a pretest – teach – posttest mode. The item data are collected and placed in two item matrices similar to those in Table 2.

The two matrices in Table 2 are the traditional method for laying out items for the use of more in-depth analyses. They can be interpreted in the following way :

(1) On the pretest (in the first matrix), person A missed item 1,

correctly answered items 2 and 3, and missed item 4. The person's total score on the pretest was 2.

(2) On the posttest (in the second matrix), after instruction, person A correctly answered items 1, 3, and 4, missed item 2, and achieved a total score of 3.

(3) The pre and posttest matrices are read similarily for persons B, C, D, and E.

(4) On the pretest, no one answered item 1 correctly, thus the total number of people answering item 1 correctly is zero and the p value of item 1 on the pretest is .00. Thus a p value is nothing more than the percent (expressed as a decimal) of people getting an item correct.

TABLE 2.

Illustrative Example of a Pretest and Posttest Item Matrix for Objective-Referenced Tests.

			Items				
			1	2	3	4	Total Score
PRETEST	People	A	–	+	+	–	2
		B	–	+	–	–	1
		C	–	+	–	–	1
		D	–	–	–	–	0
		E	–	–	–	–	0
	Number Correct		0	3	1	0	
	p Value		.00	.60	.20	.00	

			Items				
			1	2	3	4	Total Score
POSTTEST	People	A	+	–	+	+	3
		B	+	–	+	+	3
		C	+	–	+	+	3
		D	+	–	+	+	3
		E	+	–	–	+	2
	Number Correct		5	0	4	5	
	p Value		1.00	.00	.80	1.00	

(5) On the posttest, everyone answered item 1 correctly. Thus, the total number of people getting item 1 correct is 5 and the p value of item 1 on the posttest is 1.00.
(6) The pre and posttest matrices are read similarily for items 2, 3, and 4.

The item writers are them instructed to use the matrices to help them determine the quality of their items for a given objective. The following questions with their corresponding responses are presented to them :

(1) Did the children need instruction ? The number of students whose total score on the pretest was less than the criterion for mastery (3 out of 4), indicates the extent to which instruction is needed.
(2) Was the instruction over this objective successful ? If the total score column on the posttest indicates that 4 out of the 5 students who received instruction over this objective achieved mastery, it can be assumed that the instruction was successful. However, one student (letter E in the illustration) seems to need either more of the same instruction or a different type of instruction.

(3) Do all of the items seem to be measuring the objective in the same way ? If the items should have similar statistics for the pretest or the posttest the items can be considered to be behaving in a consistent fashion. However, as in the illustration where the data in either matrix indicate that something is wrong with item number 2 because it does not behave like the others, participants are urged to go back and look at the item and attempt to determine what is wrong with it. It might be found that the item is miskeyed, or there is no correct answer, or any number of problems might have occurred. The test developers are urged to revise the item or write an entirely new one and try it again with children until it behaves like the other items. (4) Finally, do the p values increase from pretest to posttest ? If the items were previously judged as consistent measures of the objective, increases in the p values from the pretest to the posttest can be accepted as some evidence of sensitivity to instruction.

In summary, the following represent the sequence of requirements that must be achieved in order to successfully complete phase one of the quality control system :

(1) a hierarchy of objectives has been accepted ;
(2) at least four items have been developed for each objective ; and
(3) basic item data have been used to resive poor items.

It should be noted at this stage that no formal discussions of reliability, or t tests or discrimination indices are mentioned to the participant.

Section Two

Once the tem developers understand the usefullness of simple item statistics, the concept of reliability is introduced. Reliability is introduced in terms of internal and external consistency. The item developers are taught to compute and understand the Kuder-Richardson formula (KR-20). The KR-20 is focused upon because it provides an estimate of internal consistency for tests with homogenous items. It also has a correction factor that takes into account the number of items in a test. The correction factor is particularly important with objective-referenced tests because they tend to have a small number of items for each objective. A good understanding of the KR-20 is necessary because it is the foundation for the development

of a new index which has been found to be useful in the development of objective-referenced tests.

Table 3 presents a hypothetical case of the results from a pretest in which no one knew or guessed the correct answers to any of the

TABLE 3.

Illustrative Example of Estimating Pretest Item Reliability.

			Items				
			1	2	3	4	Total Score
PRETEST	Students	A	–	–	–	–	0
		B	–	–	–	–	0
		C	–	–	–	–	0
		D	–	–	–	–	0
		E	–	–	–	–	0
	Number Correct		0	0	0	0	0
	p Value		.00	.00	.00	.00	.00
	Σpq						.00
	σ^2						.00
	KR-20						Undefined

questions. Table 4 contains a hypothetical case of scores that might occur on a posttest after instruction was given that was successful for everyone. In Table 4, it can be observed that all of the pupils got every item correct. These two tables emphasize a problem that occurs when KR-20's are culculated. The data presented in Table 3 and 4 contain no variance, and thus, a KR-20 reliability estimate would be undefined.

TABLE 4.

Illustrative Example of Estimating Pretest Item Reliability.

			Items				
			1	+	3	4	Total Score
POSTTEST	Students	A	+	+	+	+	4
		B	+	+	+	+	4
		C	+	+	+	+	4
		D	+	+	+	+	4
		E	+	2	+	+	4
	Number Correct		5	5	5	5	20
	p Value		1.00	1.00	1.00	1.00	1.00
	Σpq						.00
	σ^2						.00
	KR-20						Undefined

SCHOOLEY and BENJAMIN (1974) originated an index responds to the problem of little or no variance in either the pretests or the posttests when one wants an index of consistency. Table 5 contains the same information as Table 3 and 4, except this time the data are combined and the Schooley-Benjamin Index (SBI) is computed. In other words, the total number of items is still considered to be four, but the total number of students considered tested is now doubled to 10. It can be noted from the table that the SBI is now 1.00 whereas the KR-20 estimate is undefined for either the pretest or the posttest. The estimate of 1.00 is a better reflection of the consistency of the items and the test than to say it has undefined reliability.

This method of using the combined pretest and posttest matrices was well received by the measurement experts that have reviewed it

TABE 5.

Illustrative Example of Estimating Total Pretest/Posttest Item Reliability.

		Items				
		1	2	3	4	Total Score
PRETEST	A	–	–	–	–	0
	B	–	–	–	–	0
	C	–	–	–	–	0
	D	–	–	–	–	0
	E	–	–	–	–	0
POSTTEST	A	+	+	+	+	4
	B	+	+	+	+	4
	C	+	+	+	+	4
	D	+	+	+	+	4
	E	+	+	+	+	4
Number Correct		5	5	5	5	20
Σpq		.25	.25	.25	.25	1.00
σ^2						4.00
SBI						1.00

Students

because it enables one to introduce variance in a situation where classical techniques would have yielded no variance. However, it should be emphasized that the index is still in the developmental stage and comments from technicians and practicioners are being used to make the index of more use. The SBI also seems to yield information that is consistent with previously established technical standards in the field of measurement. The SBI coefficients computed in the combined fashion from more than 500 objective-referenced tests are being examined and the data will be presented in a separate paper at a later date. Partial results based on examination of the distributions of the SBI's indicate the following decisions are supported :

(1) Any objective-referenced test with an SBI of less than .50 needs a complete revision. The test is not useful for evaluation.

(2) Any objective-referenced test with a SBI between .50 and .90 neers revision, but can provide information that is useful for evaluation.

(3) Any objective-referenced test with an SBI greater than .90 does not need revision and can be used for evaluation.

Section Three

This is the final and most complex stage of developing objective-referenced instruments that are maximally useful for evaluation. The reader is reminded that the concepts presented in this section will take at least one year to implement. In order to accomplish the goals of this section, it is necessary to introduce a retention test on a one time basis, into the quality control system. A retention test is necessary for evaluation purposes because one must be reasonably certain that once a student has achieved the criterion level on the posttest, the student will continue mastery of the skill after a reasonable elapse of time.

Table 6 presents hypothetical information from a pretest, posttest, and a retention test. A one-tailed correlated t test is computed between the pretest scores and the posttest scores. This t test provides an indication of the objective's sensitivity to instruction. In other words, if the pretest-posttest t is significant, the objectives are judged as being sensitive to instruction. A one-tailed correlated t test is then computed

between the posttest scores and the retention test scores. This t test provides a check on an objective's sensitivity to retention. If the posttest-retention t is not significant, the objective can be considered as sensitive to instruction and long term retention. Thus, in order for an objective to be maximally acceptable at the end of phase 3, the correlated 5 should be significant between the pretest and the posttest and not significant between the posttest and the retention test.

TABLE 6.

Illustrative Example of Computing a Correlated t Test between Pretest/Posttest and Posttest/Retention Test.

		Item Totals				
				Pre/Post	Retention	Post/Retention
		Pretest	Posttest	Corr. t	Test	Corr. t
Students	A	1	3		3	
	B	2	4		4	
	C	1	3	−8.99 *	4	−.99
	D	2	4		4	
	E	1	2		2	

* p = .001

SUMMARY

This paper presented a system of quality control for developing objective-referenced tests that would be most useful for evaluation. The quality control system progresses through a fundamental stage of examining p values to a stage of considering various reliability

coefficients, to a final stage of examining sensitivity to instruction and retention.

This system is presently in operation in Michigan. Future papers will explore in greater detail the results from the new method of computing a measure of internal consistency and the sensitivity to instruction and retention measures.

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Abstract

This paper presents a quality control system for developing reliable and valid, teacher made, objective-referenced tests. The quality control system is divided in to three sections. Completion of section one requires the development of a hierarchy of objectives, the use of sound item writing techniques, and knowledge of basic psychometrics. The second section presents a new approach to computing reliability and suggests various levels of reliability coefficients that produce unacceptable, acceptable with revision, and acceptable objective-referenced instruments. The final section suggests a method for indicating the sensitivity to instruction and retention of the instructional objectives.

RÉSUMÉ

Le contrôle de la qualité de systèmes d'évaluation basé sur des tests de référence d'objectifs

L'article présente un système de contrôle de la qualité pour le développement par l'enseignant, de tests qualifiés de validité, valides, fidélité, et objectivité. Ce système est divisé en trois étappes. L'accomplissement de la première étappe exige le développement de la hiérarchie des objectifs, l'emploie de techniques saines pour l'écriture des items et la connaissance des bases psychométriques. La seconde étappe présente une nouvelle approche pour l'annotation de la fidélité et suggère différents niveau de coéfficients de fidélité qui fournissent quant à l'objectivité des instruments non-acceptable, acceptable après révision et acceptable.

L'étappe finale suggère une méthode pour indiquer la sensibilité des objectifs d'instructifs quant à l'instruction et l'usage.

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THE WEIGHTED NET PERCENTAGE DIFFERENCE TECHNIQUE : APPLICATIONS TO THEORETICAL MOBILITY MODELS

by

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Although there exist several powerful non-parametric techniques that focus on the net 'effects' of one or more variable (ROSENBERG, 1962, COLEMAN, 1964, BOYLE, 1966), one of the most useful, and perhaps least utilized, is SPADY's (1970) Weighted Net Percentage Difference. The WNPD is basically a method of ordering and explicating nominal and ordinal level data in such a way that the 'effects' of a given independent variable can be quickly assessed. The technique which indicates the percentage difference between two or more categories of an independent variable on a given dependent variable, can be extended to include several independent variables. The WNPD thus allows control on several additional variables while examining the specific impact of one on the dependent variable.

SPADY goes on to say that while the WNPD method is not appropriate for all research situations, and is further limited by the use of variables measured at the nominal and ordinal level and the need for large samples, it does have certain advantages over more sophisticated techniques. The major advantages of the WNPD are, according to SPADY (1970 : 15), interpretive clarity and detail, analytical assumptions and computational simplicity.

While SPADY confines the application of WNPD to the studies from the literature (DAVIS, 1964, SEWELL and ARMER, 1966) that are readily adapted to the technique, the major purpose of this paper will be to apply the WNPD to a theoretical mobility model formulated by BOUDON (1973). The purpose in doing this is threefold. First, to

illustrate the usefulness of this method in sociological research; second, to show that it can be extended to a theoretical model in such a way that the important underlying assuptions of the model can be made more explicit; and third, to interpret the findings of the model in relation to the important sociological topic of socioeconomic status as it relates to occupational mobility and the sources of inequality of educational opportunity in society.

To accomplish these ends, the paper will proceed along these lines: (1) an illustration of the WNPD technique, (2) the assumptions and structure of the BOUDON mobility model, and (3) an analysis of the model with conclusions and implications concerning the sources and consequences of the patterns of status and educational generated inequality.

THE WNPD TECHNIQUE: AN ILLUSTRATION

The basic technique for computing the WNPD involves placing the data into a table that relects the categories of the independent variables, and the percentage of individuals responding to a category of the dependent variable. By way of illustration, let us assume, that there are two independent variables that are of concern to us; namely socioeconomic status and a measure of ability such as I.Q. for graduating high school seniors. The dependent variable will be some

FIGURE 1a. *Percent of High School Seniors Planning to Attend College by SES and Ability (I.Q.) (Hypothetical Data).*

SES	I.Q.	% College Aspirations
H	H	90 (1000)
	M	70 (1000)
	L	50 (1000)
M	H	80 (1000)
	M	60 (1000)
	L	45 (1000)
L	H	70 (1000)
	M	30 (1000)
	L	10 (1000)

measure of college aspirations simply dichotomized as a positive or negative response to an item of intent.

Given these variables, the initial WNPD table illustrates the layout of the variables.

We are further assuming that SES can be measured in terms of three ordered categories as well as I.Q. Thus of 1000 H-SES, H-IQ children 90 % had aspirations to go on to college as opposed to 10 % of the L-SES, L-IQ.

Once the basic table has been developed the next step is to construct another table which illustrates the number of possible comparisons. This is referred to by SPADY as the dummy table which numbers the cells to be compared.

FIGURE 1b. *Dummy Table – Cells.*

SES	I.Q.
H	H (1) M (2) L (3)
M	H (4) M (5) L (6)
L	H (7) M (8) L (9)

Once this table has been determined, it is necessary to select the cells that are to be compared for the influence of a particular independent variable on the dependent holding, in this case, the one remaining constant. For instance, if we are concerned with finding the 'net' impact of SES on college plans, controlling for I.Q. the following comparisons would be made : Cell 1 minus 4, 4 minus 7, 2 minus 5, 5 minus 8, 3 minus 6 and 6 minus 9. If, on the other hand ; SES were to be controlled the re'evant cell comparisons would be : Cell 1 - 2, 2 - 3, 4 - 5, 5 - 6, 7 - 8, and 8 - 9. Since the WNPD is most basically a *percentage* difference of categories of the independent

on the dependent variable, we are simply trying to assess the overall 'effect' of one on the other.

Having found the cells to be compared, it is now necessary to find the relative difference in the percentages and the 'weight' of these differences. To do this a final table must be constructed.

FIGURE 1c. *Procedure for Computing WNPD.*

Dummy Cells Rate Difference	×	Cell N's	Actual Data Rate Difference	×	Cell N's	=	Subtotal
1-4	×	1 + (4/2)	.10	×	1500	=	150.0
4-7	×	(4/2) + 7	.10	×	1500	=	150.0
2-5	×	2 + (5/2)	.10	×	1500	=	150.0
5-8	×	(5/2) + 8	.30	×	1500	=	450.0
3-6	×	3 + (6/2)	.05	×	1500	=	75.0
6-9	×	(6/2) + 9	.35	×	1500	=	525.0
Totals :					9000		1500.0

$$(1)\ \text{WNPD} = \frac{\Sigma\ \text{Subtotals}}{\Sigma\ \text{Cell N's}}$$

$$(2)\ \text{WNPD} = 2\left(\frac{\Sigma\ \text{Subtotals}}{\Sigma\ \text{Cell N's}}\right) = 2\left(\frac{1500}{9000}\right) = 33\,\%$$

In figure 1c, what we are doing is looking at the overall influence of SES on college aspirations controlling for I.Q. However, since SES is trichotomized, we have to weigh the appropriate cells in a special way : For cells 1-4, the cell N would be (1000 + 500). This is necessary since cell 4 is again used in the next comparison (SPADY : 10-12). Before the weighting is done, however, the actual rate (percentage) differences are calculated. These percent differences may be negative, and if so they are treated algebraically in the final computation of the subtotals.

The final step is to add the subtotals and divide by the total N. This gives us the WNPD as illustrated in (1) in figure 1c. Since, however, the special weighting procedure was used, we multiply the WNPD X 2 so that the full weight in both comparisons is not counted twice in the final calculations (SPADY : 10). The formula is

illustrated in (2) in the figure. The final WNPD is therefore equal to 33 %. This means that the overall effect (or advantage) of coming from a H-SES background over a L-SES background on college aspirations, when controlling for I.Q., is around 33 %. According to SPADY this would be a relatively strong influence. Likewise, the influence of the I.Q. variable could be calculated along similar lines.

While the actual process of setting up the tables is time consuming, especially if many independent variables are involved, the process can be fruitful, 'since it allows for a visual examination of the data for anomalies such as interactions, reversals and curvilinearity...' (SPADY : 16). These factors can be seen operating in the multiple variable studies SPADY considers.

Two other points may be mentioned which also increase the predictive and explanatory value of the WNPD. The first is that the technique lends itself to assessing individual effects as well as overall effects. For instance, if we had included the variable of sex in our hypothetical example, it would have been possible to determine the WNPD for the entire sample. However, if a preliminary examination of the data indicated that men, for example, were more likely to have greater aspirations for college, it would be possible to calculate a separate WNPD for men and women. Doing this would indicate the relative strength of each of these factors, and would present a clearer picture as to their combined and separate contributions on the dependent variable. Computationally, the only modification of the WNPD procedure would be to calculate the subtotals of each category separately and use the base N of each sub-category (SPADY : 8).

The second advantage of the WNPD technique is that it is possible to calculate a 't-test' for each independent variable. The calculations follow a formula developed by DAVIES (1962). SPADY points out, however, that the utility of this procedure is limited since the WNPD calculations are usually based on large N's, therefore almost assuring statistical significance.

Given the basic assumptions and procedures of the WNPD, let us turn our attention to BOUDON's work on the sources of occupational inequality in Western societies ; concentrating, specifically, on the development of his theoretical model. We will then apply the WNPD method as an alternative way to analyze models of this type.

THE BOUDON MODEL

One of the most recent and fruitful attempts to analyze the sources of social inequality in industrialized societies has been the work of Raymond BOUDON (1973). A major strength of BOUDON's analysis, as LIPSET points out in the forward to the book, is that it formulates in a simple and elegant way an explanation to the process of occupational mobility, and especially in terms of how this process relates to the corollary issue (most notably in American society) of equalizing educational opportunity.

For sociology, the uniqueness of BOUDON's work lies in the fact that he systematizes empirical observations into a formal theoretical framework. This framework in effect becomes a 'middel-range' sociological theory (MERTON, 1957). This 'theory' in many ways permits a clearer and more intuitive grasp of the issues than is the case in empirical studies that are more methodologically complex (i.e., DUNCAN, FEATHERMAN and DUNCAN, 1972).

To begin, BOUDON defines inequality of educational opportunity (IEO) as 'difference in level of educational attainment according to social background,' while social mobility, or immobility, (ISO) is defined as 'difference in social achievement according to social background' (xi). The first term, then, concentrates on the overall importance of family background (socioeconomic status) in determing the chances (of a son or daughter) for higher education. The latter refers to the probability of reaching a high social (occupational) status given a particular background.

Given that both IEO and ISO are present in industrialized societies, BOUDON's primary interest is in examining the commonly held belief which he states as follows : '... if educational attainment is actually a powerful determinant of status, the probability of an individual having a higher social status than his father should be greater, the higher his level of education. Conversely, the probability of an individual falling to a lower social status than his father should be greater, the lower his educational attainment level.' (BOUDON : 3).

He goes on to say that this belief about the value of education for status in meritocratic societies is probably neither logically or empirically the case. To provide evidence for this statement, he presents the evidence of ANDERSON (1961) and BOALT (1953).

ANDERSON in studying patterns of mobility in the U.S., Sweden and Britain, came to the rather startling conclusion that there was, at best, a weak relationship between the relative educational level of individuals and their occupational status in relation to their fathers. The same general relationship emerges in BOALT : the overall weakness of education on son's eventual social status, given a particular social status of the father. What has now become known as 'Anderson's paradox' lies in the fact that the relationship between the above variables is more accurately explained if we assume *no* influence of education, rather than if we assume a maximum influence of education (BOUDON : 5).

BOUDON's basic strategy, then, involves the construction of a theoretical mobility model which attempts to resolve the ANDERSON paradox and, in addition, give additional information as to the factors which generate inequality of educational opportunity.

In order to give the model a formal (deductive) structure, BOUDON postulates several axioms. The underlying assumptions of the axioms are given a quantitative base, and are then presented in three tables. The hypothetical data in the tables is subsequently interpreted in terms of what Boudon calls the 'meritocratic parameter,' and the actual model is then constructed.

The axioms postulated by BOUDON assume the following things : (1) that the society is characterized by a high degree of inequality of educational opportunity, (2) that the society is at the same time highly industrialized with a demand for educated people, and (3) that there is not a one-to-one correspondence between the social and educational structures ; that is, people from high SES backgrounds do not automatically assume all of the higher educational positions (BOUDON : 8-10).

From these principal axioms, BOUDON goes on to list several 'auxiliary axioms' given below.

1. We are dealing with 10,000 people leaving the educational system. They are distributed in the following way : 1000 reach the highest level S_1, 3000 get to intermediary level S_2, and 6000 leave school at level S_3 (let us say roughly elementary school).
2. Given there is not a strict congruence between supply and demand for the educational levels, it is assumed (arbitrarily) that 500 reach

the highest social position C_1, 4500 reach an intermediary position C_2, and 5000 persons reach a low status level C_3.

3. Lastly, distributing the sample in terms of the influence of social background, we have 400 who have a C_1 background (that is, a C_1 father), 4000 from C_2, and 5600 from C_3.

The discussion of these axioms is then illustrated by three tables.

BOUDON interprets the first table in the following way. There are 1000 S_1 positions available with 400 sons coming from C_1 backgrounds who are competing for high educational levels. One of

TABLE 1.

Son's Education as a Function of Son's Background.

Son's Family Background	Son's Educational Level			
	S_1 (High)	S_2	S_3 (Low)	Total
C_1 (High)	320	64	16	400
C_2	544	2349	1107	4,000
C_3 (Low)	136	587	4877	5,600
Total	1000	3000	6000	10,000

(BOUDON, 1973 : 8, Table 1.5)

his assumptions is that the social background factor is still a 'powerful bias' in the competition process. He operationalizes this background factor by what he calls the 'background bias parameter' (BOUDON : 9). This is placed at 80 percent. That is, 80 percent coming from the C_1 category will be given S_1 positions.

In the table, 80 percent of 400 (or 320) positions are assigned to the C_1S_1 group. This means that 680 (1000-320) positions are now open (out of 1000), but there are now 4000 persons in the C_2 category competing for them. Since there are more people than positions, the 'background parameter' is applied to the positions remaining rather than to the number of people. Doing this, we now have 544 (80 percent of 680) who occupy the C_2S_1 position. The remaining positions are worked out using the same type of logic.

BOUDUN's second table now looks at the relationship between the son's educational level and the son's achieved status.

In this table, the competitive process is again assumed ; however, a 70 percent 'educational level bias parameter' is applied. Thus, 1000 S_1 persons compete for 500 C_1 positions ; 350 (70 percent of 500) reach the S_2C_1 category ; of the remaining 150 positions, 105 (70 percent of 150) go to the S_2 category, and so on.

TABLE 2.

Son's Achieved Status as a Function of Son's Educational Level.

Son's Educational Level	Son's Achieved Status			
	C_1 (High)	C_2	C_3 (Low)	Total
S_1 (High)	350	455	195	1,000
S_2	105	2026	869	3,000
S_3 (Low)	45	2019	3936	6,000
Total	500	4500	5000	10,000

(BOUDON, 1973 : 9, Table 1.6)

BOUDON's third table looks at the relationship of father's social status as a function of father's reducational level.

This table with a 80 percent 'educational bias parameter,' indicates that there are 800 fathers with a high educational level (S_1) who are distributed across 400 high status (C_1) positions. Thus, 320 are S_1C_1 (80 percent of 400). The other cells are filled in the same manner. BOUDON goes on to say that the 'meritocratic parameter' was chosen the way it was (80 percent-70 percent-80 percent) only to give a high value for this factor (BOUDON : 11). The idea is to emphasize and 'weight' the importance of this factor.

TABLE 3.

Father's Social Status as a Function of Father's Educational Level.

Son's Educational Level	Father's Social Status			
	C_1 (High)	C_2	C_3 (Low)	Total
S_1 (High)	320	384	96	,800
S_2	64	1709	427	2,200
S_3 (Low)	16	1907	5077	7,000
Total	400	4000	5600	10,000

(BOUDON, 1973 : 10, Table 1.7)

Following the construction of these tables, BOUDON (1973 : 12-15) elaborates the formal model. While the model is too long to reproduce here, an example is given in figure 2. The model is interpreted

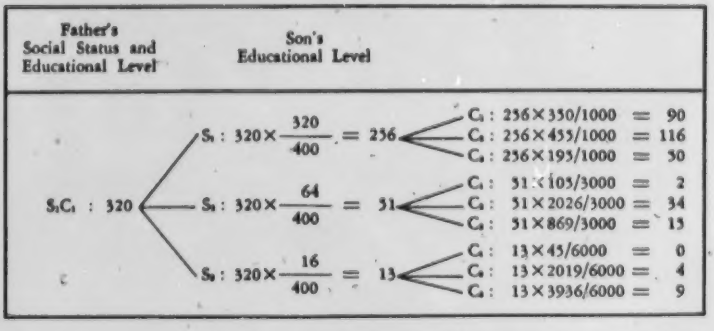
FIGURE 2. *Notation and Interpretation Used in Boudon's Model.*

S_1
S_2 = Father's Educational Level
S_3

C_1
C_2 = Father's Social Status
C_3

s_1
s_2 = Son's Educational Level
s_3

c_1
c_2 = Son's Social Status
c_3



Raymond BOUDON, *Education, Opportunity, and Social Inequality* (New York : John Wiley and Sons, 1973), p. 13.

in the following manner : '320 fathers out of 10.000 are S_1C_1, that 256 of their 320 sons reach educational level S_1, and that 90 of these 256 sons reach social status C_1' (BOUDON : 12). This type of analysis is used to analyze the nine combinations of father's social and educational status. For instance, the following branch of the model would examine the S_1C_2 fathers and go through the S_3C_3 fathers. The branches of the various combinations of the variables produce in effect a conditional probability model ; the final outcome of which is the number of sons who reach different social (occupational) statuses.

Before reinterpreting the model using SPADY's multivariate technique, let us look at BOUDON's major conclusions (1973 : 13-17)).

1. In a meritocratic society, higher levels of education do not automatically insure more chances of promotion or fewer chances of demotion than individuals who have a lower level of education. (This finding supports, by the way, JENCKS' (1973) major findings). Thus education may have very little influence on mobility.
2. Yet, the model shows that there may be a high degree of mobility even when the society is characterized by both IEO and meritocracy. This indicates that the probability of promotion for those with low social backgrounds, and demotions for those of high social backgrounds may be relatively high.
3. Thus, it is possible, BOUDON concludes, that even in societies with a high degree of meritocracy, and a rigid class system (high IEO), it is possible to have *both* a high degree of mobility and a weak correlation between education and mobility. This finding of the theoretical model would seem to resolve the Anderson paradox.

THE WNPD ANALYSIS

Given these findings, we will now attempt to apply the WNPD technique. Again the purpose is to see if the method is applicable to theoretical models of this type, and if so to examine if the conclusions of the original model are substantiated or altered in light of this new analysis.

According to SPADY, the WNPD is most amenable to variables which are measured at the nominal or ordinal levels. Examining the Boudon model, it is possible to isolate three independent variables.

These are the Father's Social Status, Father's Educational Level and Son's Educational Level. Each of these variables is trichotomized and can be thought of as constituting an ordinal level of measurement. Thus, Father's Social Status, for instance, would be : C_1 (High), C_2 (Middle) and C_3 (Low). The same would apply for Father's Educational Status : S_1 (College or Higher Education), S_2 (High School) and S_3 (Primary or Grade School). The lack of an adequate operational definition is, of course, a major problem. However, the intended meaning of the variables is clear.

The major problem of adapting the WNPD to the model concerns the conceptualization and measurement of the *dependent variable*. In the BOUDON model, the Son's Social Status (C_1) would be the dependent variable ; the rationale being that we are trying to predict the son's eventual social status given a knowledge of his educational level and his father's social and educational status. Thus in figure 2, the Son's Social Status is indicated as follows : (1) $C_1 = 90$, (2) $C_2 = 116$ and (3) $C_3 = 50$. These figures refer to the number of sons achieving a particular social status as a function of a particular educational level (S_1 = High) and a combination (S_1C_1 = both High) of the Father's Social and Educational Status.

The dependent variable is also trichotomized and can be thought to be roughly ordinal in nature. Now to determine the appropriate percentage to be used, the following rationale is employed : Following SPADY, we are only interested in *one category* of the dependent variable ; in this case it would be those sons reaching the highest (C_1) social status (in figure 2, the 90 sons achieving a C_1 status). Now to convert the raw data into percentage, we divide the figure 90 by 256 (see figure 2). In other words, there are 256 sons whose fathers had a C_1 social status and a S_1 educational level and who themselves reached a S_1 educational level. Of this group 90 or 35 % in turn achieved a high (C_1) social status. In the same manner we can determine the percentage of sons reaching a high social status who have attained different levels of education, given the fathers' particular social and educational status. In this case the percentages would be .35, .04, and .00, respectively.

Following this rationale, we will assess the relative impact of the three variables of Father's Social Status, Father's Educational Level, and Son's Educational Level on son's highest social status. The three

WNPD's will then be compared individually and contrasted with Boudon's findings. In addition, a separate analysis will be done on Son's Educational Level to demonstrate how the subgroup analysis for the WNPD is carried out.

The first step, then, is to illustrate the dummy variable table that will be used in all comparisons. As can be seen, the BOUDON mobility

FIGURE 3. *Cell Numbers for WNPD Comparisons.*

Father's Educational Status	Father's Social Status	Son's Educational Level		
		S_1	S_2	S_3
S_1	C_1	1	2	3
	C_2	4	5	6
	C_3	7	8	9
S_2	C_1	10	11	12
	C_2	13	14	15
	C_3	16	17	18
S_3	C_1	19	20	21
	C_2	22	23	24
	C_3	25	26	27

model yields 27 cells thatcan be used for comparison. Each cell represents the intersection of the variables to be compared. Differences between the cells will in turn yield the percentages that are required to compute the WNPD.

In figure 4a and b the first comparison will be between Father's Social Status and Son's Highest Social (Occupational) Status controlling simultaneously for Father's and Son's Educational Levels. The relevant cell comparisons here will be between 1 - 4, 2 - 5, 3 - 6, 4 - 7, 5 - 8, 6 - 9, and so on for the entire model. Figure 4a represents the computational method, while 4b gives us the actual layout of the table.

FIGURE 4a.

Dummy Cells Rate Difference		Cell N's		Actual Data Rate Difference		Cell N's		Subtotals
1 - 4	×	1 + (4/2)	=	——	×	282	=	0.0
2 - 5	×	2 + (5/2)	=	——	×	164	=	0.0
3 - 6	×	3 + (6/2)	=	-.009	×	66	=	-.59
4 - 7	×	(4/2) + 7	=	-.15	×	28	=	-4.2
5 - 8	×	(5/2) + 8	=	.04	×	123	=	4.9
6 - 9	×	(6/2) + 9	=	-.001	×	137	=	-.13
10 - 13	×	10 + (13/2)	=	——	×	167	=	0.0
11 - 14	×	11 + (14/2)	=	-.03	×	512	=	-15.4
12 - 15	×	12 + (15/2)	=	-.008	×	239.5	=	-1.9
13 - 16	×	(13/2) + 16	=	.05	×	126	=	6.3
14 - 17	×	(14/2) + 17	=	-.01	×	547	=	-5.5
15 - 18	×	(15/2) + 18	=	——	×	608.5	=	0.0
19 - 22	×	19 + (22/2)	=	-.02	×	141.5	=	-2.8
20 - 23	×	20 + (23/2)	=	-.03	×	563	=	-16.9
21 - 24	×	21 + (24/2)	=	-.008	×	265	=	-2.1
22 - 25	×	(22/2) + 25	=	——	×	252.5	=	0.0
23 - 26	×	(23/2) + 26	=	-.01	×	1092	=	-10.9
24 - 27	×	(24/2) + 27	=	.001	×	4686	=	4.7
						N = 10,000	Total =	-44.52

$$\text{WNPD} = 2\left(\frac{\Sigma \text{ Subtotals}}{\Sigma \text{ Cell N's}}\right) = 2\left(\frac{-44.52}{10{,}000}\right) = -.0089 = -.89\,\%$$

FIGURE 4b. *Percentage of Sons Who Achieved C_1 Level Social Status Controlling for Father's Social Status, and Son's Educational Status (Hypothetical Data).*

Father's Educational Status	Father's Social Status	Son's Educational Status		
		S_1	S_2	S_3
S_1	C_1	.35 (256)	.04 (51)	.00 (13)
	C_2	.35 (52)	.04 (226)	.009 (106)
	C_3	.50 (2)	(10)	.01 (84)
S_2	C_1	(51) .35	.00 (10)	.00 (3)
	C_2	.35 (232)	.03 (1004)	.008 (473)
	C_3	.30 (10)	.04 (45)	.008 (372)
S_3	C_1	.33 (12)	.00 (3)	.00 (1)
	C_2	.35 (259)	.03 (1120)	.008 (528)
	C_3	.35 (123)	.04 (532)	.007 (4422)
N = (10,000)		(997)	(3001)	(6002)

When the cell differences are computed, the WNPD for this particular problem is −.89 %. This is interpreted in the following way. Controlling for Father's and Son's Educational Status, the overall advantage (to the son) of having a father with a high social status as opposed to a low social status on the son's highest social status is negligible and also negative. We will leave a more detailed analysis of the finding for the conclusion of the paper.

Having determined this particular WNPD, let us look at the overall influence of the Father's Educational Level on the Son's Highest Social Status, controlling simultaneously for Father's Social Status and

Son's Educational Level. The data for this problem is presented in figure 5. The relevant cell comparisons are 1 - 10, 10 - 19, 4 - 13, 13 - 22, 7 - 16, 16 - 25 and so on.

FIGURE 5. *Computations for Sons Who Achieved C_1 Level Social Status Controlling for Father's Social Status and Son's Educational Level (Hypothetical Data).*

Dummy Cells				Actual Data				
Rate Difference	×	Cell N's	=	Rate Difference	×	Cell N's	=	Subtotals
1 - 10	×	1 + (10/2)	=	-.0014	×	281.5	=	-.3941
2 - 11	×	2 + (11/2)	=	.0392	×	56	=	2.1952
3 - 12	×	3 + (12/2)	=	0	×	14.5	=	0.0
4 - 13	×	4 + (13/2)	=	-.0030	×	168	=	-.504
5 - 14	×	5 + (14/2)	=	.0005	×	728	=	.364
6 - 15	×	6 + (15/2)	=	.0010	×	342.5	=	.3425
7 - 16	×	7 + (16/2)	=	.2	×	7	=	1.4
8 - 17	×	8 + (17/2)	=	-.0444	×	32.5	=	-1.443
9 - 18	×	9 + (18/2)	=	.0039	×	270	=	1.063
10 - 19	×	(10/2) + 19	=	.0196	×	37.5	=	.735
11 - 20	×	(11/2) + 20	=	0	×	8	=	0.0
12 - 21	×	(12/2) + 21	=	0	×	2.5	=	0.0
13 - 22	×	(13/2) + 22	=	.0022	×	375	=	-.825
14 - 23	×	(14/2) + 23	=	0	×	1622	=	.0
15 - 24	×	(15/2) + 24	=	.0009	×	764.5	=	.6880
16 - 25	×	(16/2) + 25	=	-.0495	×	128	=	6.336
17 - 26	×	(17/2) + 26	=	.0083	×	554.5	=	4.6023
18 - 27	×	(18/2) + 27	=	.0006	×	4608	=	2.7618
						N = 10,000		4.6397

$$\text{WNPD} = 2\left(\frac{\Sigma \text{ Subtotals}}{\Sigma \text{ Cell N's}}\right) = \frac{4.6397}{10.000} = .000927 = .09\,\%$$

FIGURE 6. *Computations for Sons Who Achieved C_1 Level Social Status Controlling for Father's Social Status and Father's Educational Level (Hypothetical Data).*

Dummy Cells			Actual Data			
Rate Difference ×	Cell N's	=	Rate Difference ×	Cell N's	=	Subtotals
1 - 2 ×	1 + (2/2)	=	.31 ×	281.5	=	87.27
2 - 3 ×	(2/2) + 3	=	.04 ×	38.5	=	1.54
4 - 5 ×	4 + (5/2)	=	.31 ×	165.0	=	51.15
5 - 6 ×	(5/2) + 6	=	.03 ×	219.0	=	6.57
7 - 8 ×	7 + (8/2)	=	—— ×	7.0	=	——
8 - 9 ×	(8/2) + 9	=	−.01 ×	89.0	=	−.89
10 - 11 ×	10 + (11/2)	=	.35 ×	56.0	=	19.60
11 - 12 ×	(11/2) + 12	=	.00 ×	8.0	=	.00
13 - 14 ×	13 + (14/2)	=	.32 ×	734.0	=	234.88
14 - 15 ×	(14/2) + 15	=	.02 ×	975.0	=	19.50
16 - 17 ×	16 + (17/2)	=	.26 ×	32.5	=	8.45
17 - 18 ×	(17/2) + 18	=	.03 ×	394.5	=	11.84
19 - 20 ×	19 + (20/2)	=	.33 ×	13.5	=	4.46
20 - 21 ×	(20/2) + 21	=	.00 ×	2.5	=	.00
22 - 23 ×	22 + (23/2)	=	.32 ×	819.0	=	262.00
23 - 24 ×	(23/2) + 24	=	.02 ×	1088.0	=	21.76
25 - 26 ×	25 + (26/2)	=	.31 ×	389.0	=	120.59
26 - 27 ×	(26/2) + 27	=	.03 ×	4688.0	=	140.64
				10,000.0		989.44

$$\text{WNPD} = 2\left(\frac{\Sigma \text{ Subtotals}}{\Sigma \text{ Cell N's}}\right) = 2\left(\frac{989.44}{10{,}000}\right) = 19.8\ \%$$

In this case, the WNPD equals .09 %. The interpretation would be as follows: Controlling for Father's Social Status and Son's Educational Level, the overall advantage (to the son) of having a father with a high educational level as opposed to a low educational level on the son's highest social status is negligible and positive. (The computations presented in figure 4b would, of course, be similar and therefore omitted here).

The final overall WNPD effect will be between Son's Educational Level and Son's Highest Social Status controlling for Father's Social Status and Father's Educational Level. The relevant cell comparisons for this problem are: 1 - 2, 2 - 3, 4 - 5, 5 - 6, 7 - 8, 8 - 9 and son on. The WNPD is given in figure 6.

The WNPD, unlike the other two comparisons, is much larger, 19.8 %. The interpretation would be, controlling for Father's Social Status and Father's Educational Level the overall advantage (to the

FIGURE 7a. *Computation of Weighted Net Percentage Difference in Achievement of Highest Social Status (C_1) Comparing Son's Highest Minus Middle (S_1-S_2) Educational Levels (Hypothetical Data).*

Dummy Cells Rate Difference		Cell N's		Actual Data Rate Difference		Cell N's		Subtotals
1 - 2	×	(1 + 2)	=	.31	×	307	=	95.17
4 - 5	×	(4 + 5)	=	.31	×	278	=	86.18
7 - 8	×	(7 + 8)	=	——	×	12	=	——
10 - 11	×	(10 + 11)	=	.35	×	61	=	21.35
13 - 14	×	(13 + 14)	=	.32	×	1236	=	395.52
16 - 17	×	(16 + 17)	=	.26	×	55	=	14.30
19 - 20	×	(19 + 20)	=	.33	×	15	=	4.95
22 - 23	×	(22 + 23)	=	.32	×	1379	=	441.28
25 - 26	×	(25 + 26)	=	.31	×	655	=	203.05
Total						3998		1261.80

$$\text{WNPD} = \left(\frac{\Sigma \text{ Subtotals}}{\Sigma \text{ Cell N's}}\right) = \frac{1261.8}{3998} = 31.6\,\%$$

son) of obtaining a high level of education as opposed to a low level is 19.8 %.

To illustrate, finally, the way in which the relative effects of a given variable are computed using the WNPD, comparisons are made between the son's highest and middle educational levels, and between the middle and lowest educational levels.

FIGURE 7b. *Computation of Weighted Net Percentage Difference in Achievement of Highest Social Status (C_1) by Sons Comparing Son's Middle and Lowest (S_2-S_3) Educational Levels (Hypothetical Data)*

Dummy Cells				Actual Data				
Rate Difference	×	Cell N's	=	Rate Difference	×	Cell N's	=	Subtotals
2 - 3	×	(2 + 3)	=	.04	×	64	=	2.56
5 - 6	×	(5 + 6)	=	.03	×	332	=	9.96
8 - 9	×	(8 + 9)	=	−.01	×	94	=	−.94
11 - 12	×	(11 + 12)	=	.00	×	13	=	.00
14 - 15	×	(14 + 15)	=	.02	×	1477	=	29.54
17 - 18	×	(17 + 18)	=	.03	×	417	=	12.51
20 - 21	×	(20 + 21)	=	.00	×	4	=	.00
23 - 24	×	(23 + 24)	=	.02	×	1648	=	32.96
26 - 27	×	(26 + 27)	=	.03	×	4954	=	148.62
Total						9003		235.21

$$\text{WNPD} = \left(\frac{\Sigma \text{ Subtotals}}{\Sigma \text{ Cell N's}}\right) = \frac{235.21}{9003} = 2.6\,\%$$

FIGURE 7c. *Weighted Net Percentage Difference in Achievement of Highest Social Status (C_1) by Sons Resulting from Sons' Educational Levels – Percentage Advantage Factor by Sons' Level of Education – Higher versus Lower.*

Percentage Advantage Factor	Respective WNPD
High Educational Level ($S_5 - S_4$)	31.6
Low Educational Level ($S_3 - S_2$)	2.6
Total Sample	19.8

The figures indicate that the WNPD for sons with a high level of education as compared to a middle level (roughly equivalent to high school) is 31.6 %. The comparison between middle and low educational levels yields a WNPD of 2.6. Again, the general interpretation being that having higher levers of education still improves one's chances (but does not guarantee) for a higher social status:

IMPLICATIONS AND CONCLUSIONS

The WNPD analysis of BOUDON's work has produced some interesting conclusions The first being, that it is possible to use a developed statistical technique to investigate theoretical mobility models of this type. Second, the use of the technique can be used to investigate the underlying assumptions and conclusions of the model. Third, the WNPD presents in readily understandable terms the overall impact (or effect) of the variables in the model. For the WNPD comparisons of the three principal independent variables, Father's Social Status, Father's Educational Level and Son's Educational Level, the percentage differences were –.90 %, .09 %, and 19.8 %, respectively.

The effect of the first variable supports Boudon's findings that 'both the probability of demotion for those with high social background and the probability of promotion for those with low social background may be relatively high,' (1973 : 14). While the overall

effect is negligible, the negative finding implies that there are still chances for upward mobility of low SES sons.

The second finding in terms of the Father's Educational Level variable (WNPD = .09 %) likewise supports BOUDON's claim, and especially the ANDERSON and BOALT evidence, that there is a low correlation between this variable and the Son's Social Status variable. In other words, having a well-educated father does not guarantee his son will achieve the same status, although the slight positive effect indicates that it does help.

The last variable, of Son's Educational Level, seems to have the strongest overall influence (WNPD – 19.8 %). Again, this finding is consistent with Anderson's claim that while education is probably a necessary condition for upward social mobility, it is at best only modestly linked to education. Obviously education does make a difference in eventual occupational status if only because for some occupations increasing levels of education are required (JENSEN, 1969, HERRNSTEIN, 1971). This and the other two findings relate to Boudon's conclusions that even though the stratification system remains relatively rigid there are still avenues for upward social mobility – through education. Therefore, in terms of policy implications for providing for equality of educational opportunity (EEO), the analysis would suggest that as a society we at least, minimally, provide for *access* to higher education (i.e. stressing affirmative action programs). In the same vein, the findings would indicate that it is still important to provide for equality in terms of the 'inputs' of education ; for example, per pupil expenditures, facilities, length of school year, teacher quality and instructional materials. Acknowledging the fact that much debate has centered around the effectiveness of the input variables in terms of explaining the variance in school achievement (COLEMAN, *et al.*, 1966, BOWLES, 1973, CAIN and WATTS, 1970, HANUSHEK, 1971), it would seem that one implication of this analysis would be that the inputs be freed from the SES variable. That is, if for instance, teacher verbal ability is related to school achievement, and if this in turn is linked to the community's ability to pay teachers (LEVIN, 1970), then provisions should be made both to develop teachers who have good verbal ability and to insure that they remain in low-SES areas. Or, alternatively, one could argue that if education does make some

difference on eventual occupation and that school performance is class linked, then we should encourage school desegregation plans (ST. JOHN, 1974, WILSON, 1959, MCDILL, 1969).

While specific policy recommendations do not necessarily follow from the application of a given statistical technique to a theoretical model (MILLER, 1974), the purpose here has been to show that models which do have potential policy implications can be re-analyzed and clarified by use of appropriate methods. The Weighted Net Percentage Difference is one such technique.

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ABSTRACT

The purpose of this paper is to illustrate the usefulness of the Weighted Net Percentage Difference technique (WNPD) as a methodological tool for the analysis of theoretical social mobility models. In this regard, Boudons mobility model is re-analyzed using the WNPD. The reanalysis indicates that the conclusions of the model are essentially supported. However the WNPD clarifies the findings of the model and specifies the overall and relative contributions of the variable in the model.

It is suggested that the WNPD technique can be fruitfully applied to the analysis of various models in the sociological literature.

RÉSUMÉ

La technique « Weighted Net Percentage Difference » : application sur les modèles théoriques de mobilité sociale

Le but de l'article est d'illustrer la valeur pratique de la technique « Weighted Net Percentage Difference » (WNPD) comme instrument méthodologique pour l'analyse de modèles théoriques de mobilité sociale. C'est avec cet instrument que le modèle de mobilité de Boudon a été ré-analysé. La nouvelle analyse souligne tout particulièrement les conclusions du modèle. En plus le WNPD clarifie les constatations du modèle et spécifie les contributions des variables du modèle dans leur généralité et leur relativité.

Il est démontré que la technique WNPD est avantageusement applicable à l'analyse de différents modèles de la litérature sociologique.

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ESSAI D'ANALYSE DE L'EFFET RÉGULATEUR DE TROIS TYPES DE FEEDBACK (FEEDBACK STÉRÉOTYPÉ, FEEDBACK AVEC EXPLICATION ET FEEDBACK AVEC SOLLICITATION D'UN AUTO-CONTRÔLE) SUR DES SUJETS PRÉOPÉRATOIRES

II. COMPORTEMENTS ORIENTÉS VERS L'ADULTE ET AUTO-CONTRÔLE

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Dans un premier article [1], nous avons tenté de montrer qu'il était plus rentable – du point de vue de l'acquisition de notions – d'engager le sujet dans une séquence auto-évaluative que de lui octroyer un feedback direct. C'est ce dont témoignait la grande efficacité correctrice du feedback de contrôle, laquelle contrastait avec l'inefficacité relative des feedbacks directs (stéréotypés et expliqués) négatifs.

Néanmoins, la seule efficacité immédiate d'un feedback ne constitue pas un argument décisif pour démontrer sa valeur éducative. L'apparition accélérée de la bonne réponse n'est pas nécessairement la meilleure manière de préparer les apprentissages ultérieurs. Dans une perspective développementale, en effet, ce qui est important n'est pas le nombre de réponses que l'enfant a appris dans le passé mais dans quelle mesure les constructions antérieures (mêmes si elles sont « fausses ») aident l'enfant à construire des connaissances ultérieures lorsqu'il aura dix ans et plus (KAMII, 1974, p. 108). Seule une

1. Voir No. 1 de ce volume, pp. 5-33.

étude longitudinale semble pertinente par rapport à cette optique développementale issue de la conception piagétienne du caractère intégratif des structures. Malheureusement, les difficultés que rencontre une telle approche sont presqu'insurmontables et la définition expérimentale de la manière d'établir les apprentissages initiaux de sorte qu'il s'intègre idéalement dans les constructions futures est encore loin d'être réalisée. Toutefois, il est plausible de penser qu'un feedback qui sollicite une auto-évaluation et une correction corrélative fournit à l'enfant les moyens d'auto-réguler sa connaissance et participe davantage au développement ultérieur des structures cognitives qu'un feedback direct qui impose la connaissance de l'extérieur.

Cependant, dans la stimulation du processus de vérification par le probing, le rôle de l'adulte reste important puisqu'il émet le stimulus qui active la séquence d'auto-évaluation. Et le problème subsiste de savoir si le sujet apprend à émettre cette séquence indépendamment de la sollicitation de l'adulte. Or, la question est importante puisqu'il s'agit de déterminer si le sujet contrôle spontanément la valeur de sa réponse ou si ce comportement reste conditionnel au comportement verbal de l'adulte.

Cette interrogation réintroduit, en fait, l'aspect social au sein même de la problématique de la stimulation cognitive. Il est clair, selon nous, que toute régulation interpersonnelle centrée sur les problèmes de connaissance (et en particulier, le teaching) mêle les questions de relations sociales à celles du contrôle des acquisitions. C'est cette interaction du social et du cognitif que nous tâcherons d'examiner ici par l'analyse des conduites collatérales à la réponse effective, parmi lesquelles nous distinguons les comportements orientés vers l'adulte et les comportements orientés vers le modèle ou le matériel (cfr. l'analyse de séquences d'auto-correction). Il est possible que l'apparition de l'une ou l'autre de ces conduites collatérales soient dépendantes du type de feedback émis par l'adulte. Nous supposons, en définitive, que lorsque le maître abandonne son rôle de transmission et se propose de stimuler et d'assister l'activité de l'enfant (« answer giver vs processus facilitator », REST, 1974, p. 243), « l'attitude » de ce dernier vis à vis du maître s'en trouve modifiée.

L'hypothèse plus générale de cette analyse est donc qu'à côté de sa fonction régulatrice de la connaissance, la « réaction » verbale de

l'adulte engendre une relation d'adulte à enfant dont la nature varie selon le type de feedback utilisé. En d'autres termes, si la fonction première d'une « réaction » pédagogique concerne le contrôle des conduites cognitives, cette « réaction » dans la mesure où elle est délivrée par un congénère, s'insère dans un réseau de communication dont elle constitue sans doute une variable déterminante. Cet impact social définirait en quelque sorte, la fonction secondaire des feedbacks utilisés par l'adulte.

Les analyses qui suivent sont réalisées à partir des données recuellies à l'occasion des trois séances décrites dans l'article précédent. D'autres analyses sont effectuées à partir de deux séances (activités de type II) organisées à le suite des trois séances déjà mentionnées.

Au total, cinq séance furent aménagées. Deux types d'activités sont distinguées :

– Type I : la consigne demande de copier un modèle

– Type II : la consigne spécifie un résultat qu'il faut atteindre, une construction à réaliser.

La première séance comprend un entraînement à la reproduction d'un ordre linéaire direct. La seconde séance est consacrée à la copie de mosaïques de couleurs et concerne les notions projectives devant-derrière, à gauche- à droite. La troisième séance s'apparente à la réalisation d'une maquette de village : il s'agit de disposer sur une surface quadrillée des maisons miniatures et de respecter les coordonnées d'un modèle.

Les activités de type II seront présentées au moment de leur analyse.

Rappelons brièvement les caractéristiques des trois types de feedbacks étudiés.

Le feedback stéréotypé consiste à renseigner le sujet sur la seule exactitude de sa réponse (c'est juste – ce n'est pas juste). Le feedback expliqué consiste non seulement à informer l'enfant de la valeur de sa réponse, mais encore à décrire les caractères formels de la réponse qui justifient une évaluation positive ou négative (c'est juste parce que ... – ce n'est pas juste parce que ...). Le feedback de contrôle (BAYER, 1972) ou probing (ROSENHINE, 1973) désigne les réactions verbales de l'enseignant qui visent à solliciter de l'enfant un éclaircissement, une justification, une preuve ou une vérification (Tu es

sûr que c'est juste ? – Montre-moi un peu si c'est juste ? ou Comment sais-tu voir que c'est juste ?).

Le feedback stéréotypé et le feedback expliqué constituent des feedbacks direct[1] (ZAHORIK, 1969). Le feedback de contrôle ou probing est, au contraire, un feedback indirect (idem).

ANALYSE DES CONDUITES COLLATÉRALES ORIENTÉS VERS L'ADULTE

Une conduite collatérale consiste en une unité comportementale contigue à une autre conduite du même sujet prise comme référence. Sous cet intitulé, nous désignons exclusivement – pour notre part – les conduites enfantines collatérales aux réponses effectives.

La topographie du comportement considéré ici est le déplacement de la tête vers l'animatrice. Ce comportement peut être inséré dans deux séquences relativement différentes :

(a) Suite à une sollicitation ou à une réaction, l'enfant prend un élément en main et, avant de le poser (à l'endroit réservé à sa réponse), il tourne la tête vers l'animatrice. Ensuite, plusieurs possibilités se sont présentées : soit production d'une réponse effective, soit modification de l'élément tenu dans la main. Plusieurs « regards » ont parfois précédé l'émission d'une réponse effective.

(b) Suite à une sollicitation ou à une réaction, l'enfant fournit une réponse effective avec ou sans examen précurrent du modèle, puis tourne les yeux vers l'animatrice en conservant la main en contact avec les éléments de la réponse.

Dans le premier cas, le « regard » précède directement l'émission de la réponse effective. Dans le second cas, il y succède. Toutefois, ces deux « micro-comportements » nous ont paru indissociables de leur proximité temporelle avec la réponse effective.

Deux questions furent mises à l'épreuve :

– la fréquence d'émission de ces regards vers l'animatrice diffère-t-elle selon le type de « réaction » adressée à l'enfant ;

– ces regards sont-ils émis en égale quantité avant et après la production de la réponse effective.

1. Ces différents concepts sont définis précisément dans le premier article.

Dans le tableau 1, nous fournissons comme valeur de référence le nombre des réponses effectives produites après sollicitation et après réaction. Il est aisé dès lors d'obtenir ensuite des fréquences relatives [1].

TABLEAU 1.

Conduites collatérales de type a (regard – réponse).

		Feedback stéréotypé					Feedback expliqué					Feedback de contrôle				
Sujets		Cat	Jos	Mic	Nad	Tot	Gio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
1ère séance	Vers A	–	0	8	0	8	7	0	0	0	7	0	0	0	0	0
	N de rép	–	18	74	59	151	68	7	16	16	107	4	6	20	22	52
2e séance	Vers A	0	1	7	1	9	5	0	7	0	12	0	2	0	1	3
	N de rép	12	23	32	27	94	38	28	30	21	117	19	29	21	20	89
3e séance	Vers A	0	22	14	0	36	12	2	2	10	26	1	1	0	1	3
	N de rép	47	110	93	149	401	99	46	61	53	259	43	50	47	51	191
Global	Vers A	0	23	29	1	53	24	2	9	10	45	1	3	0	2	6
	N de rép	59	151	211	235	646	205	81	107	90	483	66	85	88	93	332
%						8,2					9,3					1,8

En négligeant la spécificité des séances, nous obtenons les pourcentages suivants :

feedback stéréotypé : 8,2 % pour N = 646
feedback expliqué : 9,3 % pour N = 483
feedback de contrôle : 1,8 % pour N = 332.

1. Nous ne pouvons évidememnt pas considérer les chiffres en valeur absolue puisque la probabilité théorique d'émission de ces comportements s'accroît avec le nombre de réponses effectives.

2. Nous calculons $Z = \dfrac{P'-P''}{\sqrt{PQ\left(\frac{1}{N'} + \frac{1}{N''}\right)}}$

où p et p' sont les pourcentages à comparer, q et q' leur complément respectif, N et N' le nombre par rapport auquel le pourcentage a été calculé.

La signification statistique [2] des différences entre pourcentages sont les suivants :

– feedback stéréotypé – feedback expliqué
Z = 0.66 NS pour d.l. 1127
– feedback stéréotypé – feedback de contrôle
Z = 4.92 S à P.001 pour d.l. 972
– feedback expliqué – feedback de contrôle
Z = 5. S à P.001 pour d.l. 813

Bien que la comparaison porte sur des pourcentages très bas, il apparaît néanmoins que le feedback de contrôle se différencie des feedbacks directs : pratiquement aucun regard vers l'animatrice n'a été produit par les sujets soumis à ce type de réaction. L'hypothèse pourrait être faite que cette absence quasi totale de regards vers l'animatrice consiste en un effet secondaire du probing. Mais c'est plutôt les comportements que leur absence qu'il s'agit d'expliquer. La question concerne dès lors l'émission de ces regards vers l'animatrice par les sujets soumis aux feedbacks directs.

TABLEAU 2.

Conduites collatérales de type b (réponse – regard).

		Feedback stéréotypé					Feedback expliqué					Feedback de contrôle				
Sujets		Cat	Jos	Mic	Nad	Tot	Cio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
1ère séance	Vers A	–	2	43	0	43	17	0	11	0	28	1	1	2	7	11
	N de rép	–	18	74	59	151	68	7	16	16	107	4	6	20	22	52
2e séance	Vers A	0	6	26	0	32	17	5	22	2	46	0	1	1	2	4
	N de rép	12	23	32	27	54	38	28	30	21	117	19	29	21	20	89
3e séance	Vers A	2	89	60	2	153	76	5	26	11	118	0	1	4	0	5
	N de rép	47	110	95	149	401	99	4[illegible]	61	53	259	43	50	47	51	191
Global	Vers A	2	97	129	2	230	110	10	59	13	192	1	3	7	9	20
	N de rép	59	151	211	235	646	205	81	107	90	483	66	85	88	93	332
%						36					40					6

La fréquence des regards vers l'animatrice émis après production de la réponse est manifestement supérieure à celle des regards émis avant la réponse effective. En effet, si comme précédemment nous établissons des pourcentages globaux, nous obtenons :
pour le feedback stéréotypé : 36 % pour N = 646
pour le feedback expliqué : 40 % pour N = 483
pour le feedback de contrôle : 6 % pour N = 332.

Les pourcentages obtenus au sein des groupes feedback stéréotypé et feedback expliqué ne diffèrent pas significativement puisque Z = 1.12 N.S. pour d.l. 1127.

Par contre, les pourcentages obtenus au sein des groupes « feedback stéréotypé » et « feedback de contrôle » diffèrent très significativement puisque Z = 12.72 S à P.001 pour d.l. 972. Il en va de même lorsque nous comparons les pourcentages obtenus au sein des groupes « feedback expliqué » et « feedback de contrôle » puisque Z = 13.18 S à P.001 pour d.l. 972.

La différence entre les fréquences relatives de regards émis avant et après la réponse effective est explicable par la contiguité temporelle des regards émis après la réponse effective avec l'octroi du feedback par l'animatrice, lequel constituerait un renforcement de ces regards.

La transformation des fréquences brutes du tableau 2 en fréquences relatives révèlent des évolutions assez intéressantes.

TABLEAU 3.

	Feedback stéréotypé					Feedback expliqué					Feedback de contrôle				
Sujets	Cat	Jos	Mic	Nad	Tot	Gio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
1ère séance	–	.11	.58	0	.30	.25	0	.19	0	.26	.25	.17	.1	.32	.21
2e séance	0	.26	.81	0	.34	.45	.18	.73	.1	.38	0	.03	.05	.1	.04
3e séance	.04	.81	.63	.01	.38	.77	.11	.43	.21	.46	0	.02	.09	0	.03

La tendance générale des sujets des groupes feedbacks stéréotypés et expliqués consiste en une augmentation des fréquences relatives en cours de trois séances. Toutefois, au plan individuel, Mic., Mar. et Pat. ne se conforme pas parfaitement à ce « pattern ». Dans le groupe « feedback de contrôle », l'évolution des proportions au fil des séances

témoigne, au contraire, d'une diminution progressive. Rap. ne se conforme pas parfaitement à cette tendance, mais les modifications sont, dans son cas, négligeables. Il semble, par conséquent, que les feedbacks directs amplifient la probabilité d'apparition des regards orientés vers l'adulte et qu'au contraire, le feedback de contrôle atténue la probabilité d'apparition de ces mêmes comportements. Cependant, les variations individuelles non conformes observées incitent à une certaine réserve.

Les données précédentes montrent donc un effet différentiel des trois feedbacks sur la fréquence des conduites collatérales étudiées. Divers incidents critiques élucident – croyons-nous – la fonction des regards orientés vers l'animatrice dans le cadre des procédures d'octroi direct du feedback par cette dernière, et corrélativement suggèrent pourquoi les sujets soumis au feedback de contrôle ne présentent guère ce type de conduite.

Jos. compose une mosaïque de couleur (2e séance). Il a placé trois éléments. Il prend un aure élément, regarde l'animatrice, regarde le modèle, regarde l'animatrice, place l'élément, se tourne à nouveau vers l'animatrice et demande : « C'est juste ? ».

Pat. compose également une mosaïque de couleur. Il place un élément, regarde l'animatrice, sourit ; l'animatrice sourit. Il regarde alors le modèle, place deux éléments, regarde l'animatrice, regarde le modèle, place le quatrième élément, puis se tourne vers l'animatrice et demande : « C'est ça ? ».

Les interrogations qui accompagnent dans ces deux exemples les conduites collatérales étudiées plus haut, consistent en une demande de confirmation à laquelle l'animatrice répond (positivement ou négativement) lorsqu'elle octroie un feedback direct. Par contre, lorsqu'elle donne un feedback de contrôle, le sujet est renvoyé au modèle et ne peut obtenir « aucun profit à consulter » l'animatrice. L'obtention d'un feedback direct agirait donc comme un renforcement de ces conduites collatérales ; le feedback de contrôle n'aurait par contre aucune valeur renforçatrice en ce qui concerne ces conduites.

Une seconde interprétation consiste à lier l'émission de ces conduites collatérales à la possibilités d'être sanctionné par un feedback négatif. Ces regards vers l'animatrice constitueraient en somme des sous-produits émotionnels des feedbacks directs négatifs. Le feedback de contrôle éviterait ces effets secondaires dans la mesure où, même en cas d'erreurs, il propose la vérification et ne délivre aucune évaluation négative au sujet.

Cette hypothèse apparaît d'autant plus plausible qu'un ensemble de conduites collatérales observées parmi les sujets soumis aux feedbacks directs s'apparente à des manifestations de stress. Nous donnons trois exemples à titre d'illustration.

Nad. reçoit un feedback négatif (à l'occasion de la deuxième séance). Elle se frotte les yeux puis regarde vers le modèle fixement en se balançant sur sa chaise (de droite à gauche), regarde les provisions (autres éléments disponibles), se balance toujours, puis se lève, prend un élément rouge, regarde le modèle, dépose l'élément sur le coin de la table, s'assied et regarde à droite dans la direction d'un mur couvert de photographies de Donald Duck et Mickey Mouse.

Pat. reçoit un feedback négatif expliqué, pousse un soupir, quitte la proximité du jeu pour aller chercher un mouchoir sur un paillasson déposé là. (N.B. : Pat ne se mouchera pas de toute la séance.)

Vér. reçoit un feedback négatif expliqué. Elle commence à se balancer de droite à gauche (une autre fois d'avant en arrière) le visage tourné vers l'animatrice, les mains agrippées au siège de sa chaise.

Ces balancements et ce comportement de fuite directement consécutifs au feedback négatif suggère l'attribution d'une valeur aversive aux feedbacks directs négatifs. D'autres comportements tels que des digressions verbales, des conduites centrées sur les vêtements, etc., semblent également liés à l'octroi par l'adulte de feedbacks directs négatifs.

Cat. doit placer un élément en avant d'un autre. Elle le place en arrière.

Animatrice : « Ce n'est pas juste, tu sais Cat. »

Cat. enlève alors l'élément erroné. Elle le tient des deux mains et le regarde. Elle se retourne vers sa chaise puis s'assied. De la main gauche, elle prend le bord de sa robe qu'elle regarde. Ses petits doigts grattent la broderie cousue au bord de la robe. Elle lève alors le visage, regarde le modèle pendant un instant. Elle regarde ensuite l'élément qu'elle tient en main, le manipule, esquisse un geste vers le socle, retire son bras, dresse l'élément sur le socle, se retourne vers sa chaise qu'elle déplace un peu, s'assied, se lève, s'appuye sur la table, se soulève sur la pointe des pieds, se penche vers le modèle et fait tomber l'élément dressé, le saisit à nouveau, esquisse un geste, retire son bras, le place au même endroit que précédemment, l'enlève, s'assied, se lève, le place à nouveau en arrière des éléments de références, le laisse [1].

1. L'animatrice ne devait réagir que lorsque le sujet avait complètement lâché l'élément et retiré le bras de dessus le socle. Nous avions, en effet, constaté au cours de la phase préliminaire que l'expérimentatrice était plus prompte à réagir lorsque l'enfant plaçait correctement l'élément. Parfois, elle confirmait une esquisse de geste.

Au contraire, une esquisse de placement incorrect n'était pas infirmée.

A : « Ce n'est pas encore juste, tu sais Cat.

Cat. enlève l'élément, se retourne vers sa chaise, la déplace légèrement, tourne le visage vers l'animatrice, regarde le modèle, regarde l'élément, le place au coin de la planche-socle, l'enlève, le regarde, soupire.

A : « Attends, Cat., je vais le mettre (A le met).

E : fait quelques pas en tapant les pieds sur le sol.

Ces différentes conduites s'apparentent – nous semble-t-il – à la fuite motrice ou verbale, ou au déplacement des éthologistes. A côté de ces manifestations spectaculaires, nous avons pu observer, chez Cat., des séquences comportementales composées d'esquisses de placement d'un élément suivies d'une rétraction. Ces réticences accompagnent la réponse effective émise après réaction et celle émise après sollicitation à l'occasion d'items subséquents à l'obtention du feedback négatif. L'extrait suivant est explicite à ce sujet.

Au quatrième item de la troisième séance :

A : « Regarde, Cat., fais encore un peut tout à fait pareil ».

E : a regardé lorsque A a placé la maison. Elle prend la maison correspondante, regarde le modèle puis place la maison en D_3.

A : « Ce n'est pas juste comme ça Cat. ».

E : « Non ? » – Elle enlève alors la maison placée, la retourne en tous sens, en la regardant et dit : « Il y a de l'herbe sur la maison ». Elle tourne la tête vers A et répète « Y a de l'herbe ».

A : « Oui, y a de l'herbe, mais tu dois faire la même chose que moi ».

E : « Sur ma maison, y a pas de l'herbe. Ah non, il n'y a pas de l'herbe ».

Cat. place à nouveau la maison en D_3 et retire le bras.

A : « Ce n'est pas encore juste, hein Cat. ».

E : « Oh non ! » Elle regarde le modèle, puis place la maison en E_3 ce qui est correct. Elle conserve la main dessus et regarde à nouveau le modèle, puis imprime un mouvement de va et vient à la maison (ça dure quelques instants).

A : « Qu'est-ce que tu fais ? tu la laisses là ? »

E : « Oui ! (retire le bras).

A : « Oui, c'est juste comme ça !

E : « Oui, il faut la laisser là !

A : « Regarde, Cat. (elle place la cinquième maison). Tu fais encore la même chose ?

E : Regarde, prend la maison correspondante, regarde le modèle Tends le bras, le retire, place la maison correctement, puis la déplace vers le haut, puis la reprend, la replace correctement, baisse les yeux, la lâche, la reprend, la retourne sur elle-même (de 360°), puis la lâche.

A : « Oui, c'est juste ».

Toutes les corrections consécutives aux six feedbacks négatifs reçus sont accompagnées des hésitations décrites ou de digressions verbales.

Sur les 41 réponses effectives émises après sollicitation, 19 sont précédées de séquences d'esquisse et de retrait.

Par ailleurs, les conduites collatérales émises à côté de la première réponse effective (après sollicitation) voisinent avec un feedback négatif. Ainsi, Cat. a reçu un feedback négatif au quatrième item (cf. supra). Lors des quatre items qui suivent, l'émission de la réponse effective est accompagnée de conduites collatérales. Toutefois le nombre de conduites collatérales se réduit petit à petit. Nous avons décrit les conduites adjacentes à l'émission de la réponse au cinquième item. Au huitième item, la séquence nous paraît plus courte ; la voici :

E : prend la maison, regarde le modèle, place la maison à l'endroit approprié, tourne le visage vers l'animatrice (elle tient toujours la maison) puis regarde la maison et « ajuste » la position (elle fait bouger un côté et puis l'autre de la maison).

Nous n'avons pas relevé de conduites adjacentes avant le 16e item (aucun feedback négatif ne fut octroyé entretemps). A l'item 20, deux feedback négatifs sont adressés à Cat. Une séquence courte de conduites adjacentes est relevée aux items 21, 22, 23, 24. Nous en avons encore relevé aux items 28, 29, 30, 31, 33 // 37, 38, 39, 40. Les feedbacks négatifs furent délivrés aux items 22, 27, 36.

Des conduites telles que celles rapportées précédemment sous la mention « incidents-critiques » ne sont apperues que parmi les sujets soumis aux feedbacks directs. La fréquence très faible (17) de ces comportements de « fuites » empêchent toute analyse statistique [1]. Néanmoins, les hésitations (observées chez Cat. mais négligées chez les autres sujets) pourraient être la base d'une quantification puisque ces séquences comportementales sont aparues en liaison étroite avec les conduites plus spectaculaires de Cat. (digression verbale, soupir, éloignement de la table de travail accompagné de coups de pied vers le sol, ...). Un relevé systématique permettrait d'établir dans quelle mesure l'émission de ces conduites est fonctionnellement dépendante de l'obtention de feedbacks directs. Il reste, en outre, à déterminer si les regards orientés vers l'animatrice et les conduites discutées ci-dessus correspondent aux deux aspects d'un même phénomène ou coïncident à deux classes fonctionnellement distinctes. Pour résoudre cette

1. Sur les 17 « incidents-critiques » observés, 3 ont été observés dans le cadre du feedback expliqué (Vér. : 2 ; Pat. : 1) et 14 parmi les sujets du feedback stéréotypé

question, il conviendrait de dissocier l'aspect « direct » des feedbacks stéréotypé et expliqué de l'éventualité de recevoir une désapprobation. L'analyse de ces deux types de conduites collatérales (regards et hésitations) dans le cadre d'un apprentissage sans erreur permettrait sans doute de contrôler si la probabilité d'émission de l'une de ces conduites (ou des deux) est conditionnelle à la possibilité d'être sanctionné par un feedback verbal négatif.

Quoiqu'il en soit de la dimension déterminante dans l'apparition de ces deux conduites, il n'en reste pas moins que la proportion des regards orientés vers l'animatrice croît parmi les sujets soumis aux feedbacks directs et décroît parmi les sujets soumis au feedback de contrôle. Par conséquent, l'expérience présente montre au moins l'existence d'une dépendance fonctionnelle entre ces conduites collatérales et le type de feedback délivré par l'adulte : les feedbacks directs augmentent la probabilité d'émission des regards orientés vers l'animatrice.

Examen du modèle subséquent à l'émission de la réponse effective

Si des regards dirigés vers l'animatrice sont émis après la production de la réponse effective, d'autres comportements pouvaient également être présentés suite à la réponse effective, notamment des regards vers le modèle. La fréquence de ces examens du modèle subséquents à l'émission de la réponse effective varie-t-elle selon la procédure de réaction concernée ?

Cette hypothèse tardive a fait l'objet d'une vérification partielle. Nous avons observé et noté les comportements présentés par Mic., Pat. et Rap. après la production de la réponse effective. Nous retenons ici le nombre d'examens du modèle subséquents à la réponse effective et tâchons de comparer ces trois sujets appartenant chacun à un groupe. L'observation de ces comportements n'a été réalisée qu'à l'occasion de la séance concernant les Constructions de Maisons.

Nous avons relevé :

pour Mic., 8 regards vers le modèle, 57 réponses effectives ont été émises après sollicitation,

pour Pat., 8 regards vers le modèle, 47 réponses effectives ont été émises,

pour Rap., 32 regards vers le modèle, 41 réponses effectives ont été émises.
Transformés en proportions, ces chiffres donnent les valeurs
pour Mic., 0.14
pour Pat., 0.17
pour Rap., 0.78
Rap. a émis 4,5 fois plus de regards vers le modèle après la production de la réponse effective que Pat., 5.5 fois plus que Mic.

D'autre part, dès le début de nos observations, nous avons noté très minutieusement les essais et erreurs émaillant la production de la réponse effective après sollicitation de tous nos sujets et pour toutes les séances. Une exploitation de ces notes peut enrichir la problématique soulevée ici.

Si la fonction de ces regards vers le modèle subséquents à la réponse effective consiste à contrôler spontanément l'exactitude de la réponse produite, ces conduites de vérification doivent engendrer des procédures d'auto-correction. Ces phénomènes d'auto-correction, nous pouvons les appréhender à travers nos notes.

Afin de préciser la séquence comportementale désignée par l'expression « auto-correction », nous décrivons un cas extrait du protocole de Lau.

Lau doit copier un ordre à 6 éléments

Noir + Vert + Brun + Bleu clair + Vert clair + Jaune.

Elle prend les éléments un à un et les garde en mains : elle regarde le modèle, puis prend un élément, regarde, puis prend, regarde puis prend. Au total, six fois. Puis sans plus regarder, elle commence à disposer

Noir + Brun + Vert.

Elle s'interrompt pour regarder le modèle, dépose alors les éléments qu'elle gardait en mains, sur le coin du socle ; et inverse l'ordre du Brun et du Vert ; puis regarde à nouveau le modèle met le Bleu clair ; puis regarde et met le Jaune et le Vert clair, ce qui donne l'ordre :

Noir + Vert + Brun + Bleu clair + Jaune + Vert Clair.

Puis regarde une fois encore le modèle, et permute le jaune et le vert clair. L'arrangement des couleurs est conforme au modèle.

Un second exemple est extrait du protocole de Sen. (Constructions des Maisons).

Sen. doit placer les ferme en F2. Elle regarde le modèle, prend la ferme, regarde le modèle, place la ferme en D2 (erreur concernant la notion gauche-droite) regarde à nouveau le modèle et déplace en F2 (item I.3).

Un dernier exemple est extrait du protocole de Lau. (Constructions des Maisons).

Lau. doit placer la ferme en D3. Elle regarde le modèle, prend la ferme, regarde le modèle, place en D4, regarde à nouveau le modèle, et déplace la ferme en D3 (item XI.I).

En définitive, nous considérons comme procédure d'auto-correction la séquence comportementale :
– regarde le modèle – produit la réponse effective – regarde à nouveau le modèle – modifie la réponse effective préalablement produite.

Le tableau suivant nous donne les fréquences concernant la séquence comportementale en question pour tous les sujets et à l'occasion de chaque jeu.

TABLEAU 4.

		Feedback stéréotypé					Feedback expliqué					Feedback de contrôle				
Sujets		Cat	Jos	Mic	Nad	Tot	Gio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
1ère séance	a - c	–	2	0	4	6	3	0	4	2	9	0	2	1	2	5
	N	–	9	24	34	67	28	7	9	10	54	4	6	11	19	35
2e séance	a - c	0	1	0	2	3	3	0	2	0	5	3	3	3	4	13
	N	11	13	13	11	48	15	11	15	15	56	11	11	11	11	44
3e séance	a - c	0	2	1	1	4	1	1	3	0	5	5	4	2	3	14
	N	41	52	57	63	213	53	41	53	41	182	41	47	41	41	170
3e séance combinées	a - c	0	5	1	7	13	7	1	9	2	19	8	9	6	9	32
	N	52	74	94	108	328	96	59	71	66	292	56	64	63	71	249

En négligeant la spécificité des séances et les différences individuelles, nous obtenons les pourcentages suivants :
feedback stéréotypé : 3,96 % pour N = 323
feedback expliqué : 6,50 % pour N = 292
feedback de contrôle : 12,85 % pour N = 249

Afin de déterminer d'éventuelles différences significatives entre ces pourcentages, nous calculons des Z :
feedback stéréotypé – feedback expliqué
Z = 1.5 N.S. pour d.l. 518
feedback stéréotypé – feedback de contrôle
Z = 3.95 S à P.001 pour d.l. 575
feedback expliqué – feedback de contrôle
Z = 2.58 S à P.001 pour d.l. 539

Les sujets soumis au feedback de contrôle ont donc présenté plus souvent cette séquence d'auto-correction que les sujets soumis aux feedbacks directs. Au travers de ces données, il est permis de penser que les feedbacks de contrôle suscitent davantage que les feedbacks directs la vérification spontanée des réponses effectives produites. En effet, ces auto-corrections sont conditionnelles à une réponse préalable de vérification (regards vers le modèle subséquents à l'émission de la réponse effective) et à la découverte d'une erreur dans la réponse. Il est possible, par conséquent, que les sujets soumis au feedback de contrôle aient émis de manière relativement fréquente ce comportement de vérification spontanée sans produire à la suite une auto-correction dans la mesure où ils ne découvraient pas d'erreurs. Cette hypothèse reste à confirmer malgré les résultats positifs obtenus jusqu'à présent à l'occasion de l'analyse réalisée sur un sujet de chaque groupe.

Conduites orientées vers l'adulte et vérification spontanée dans les activités de type II

Ces activités se distinguent des précédentes en ce sens qu'il ne s'agit plus de copier un modèle, mais d'atteindre un résultat fixé par l'adulte. Les activités du type II sont proposées lors des quatrième et cinquième séances consécutives aux trois déjà analysées. Ces séances 4 et 5 étaient divisées en deux parties :
– initiation à une performance avec l'aide de l'animatrice,
– réalisation de la même performance, mais l'animatrice ne dispense plus de feedback. Cette seconde partie constitue une sorte de post-test. Les analyses porteront essentiellement sur cette seconde partie.

a – Les bonhommes et le mobilier

Le principe de ce jeu est simple : il s'agit de choisir des bâtonnets d'égale grandeur parmi d'autres pour les encastrer dans ce qui devient un bonhomme, un tabouret, une table, une chaise. Le post-test exige la confection de deux chaises c'est-à-dire le choix répeté de 4 bâtonnets parmi 16 autres. L'enfant peut réaliser autant d'essais qu'il le désire. Certains ont toutefois abandonné. C'est ce que montre le tableau suivant.

TABLEAU 5.

	Feedback stéréotypé					Feedback expliqué					Feedback de contrôle				
Sujets	Cat	Jos	Mic	Nad	Tot	Gio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
Réussite	2	2	1	0	3	1	1	1	0	3	2	2	2	2	8
Abandons	0	0	1	2	3	1	1	1	2	5	0	0	0	0	0
Nombre d'essais réalisés	23	20	20	21	94	10	24	12	24	70	9	15	28	10	62

Le nombre d'abandons est particulièrement élevé (N = 5) dans le groupe feedback expliqué, moindre (N = 3) dans le groupe feedback stréotypé, nul dans le groupe feedback de contrôle.

D'autre part, le classement opéré en fonction du nombre d'essais réalisés n'est pas parfaitement isomorphe à celui établi à partir du nombre d'abandons.

Ces variations dans le nombre d'abandons s'accompagnent de variations dans les fréquences de conduites orientées vers l'adulte. En effet, bien qu'ils soient avertis du silence de l'animatrice lors de ce post-test, certains enfants présentent des conduites orientées vers l'animatrice qu'il semble plausible d'interpréter comme des demandes de feedback. Cinq types de conduites ont été distinguées.

1. attend : l'enfant encastre un bâtonnet, puis observe une pause. Cette pause est souvent accompagnée d'une immobilité de la main au-dessus du jouet. Dans les autres cas, l'enfant dépose la main sur la table et ne cherche pas d'autres bâtonnets pour compléter le jouet.
2. montre : ce comportement est un complément du précédent. Suite

à une certaine attente, l'enfant pousse le jouet du côté de l'animatrice, ou le saisit et le place sous les yeux de cette dernière.
3. regard vers l'animatrice ; il s'agit d'un comportement similaire à ceux que nous avons discuté précédemment. (R vers A)
4. question à l'animatrice du type : « C'est les mêmes, ça ? ». (Q à A)
5. appel à l'aide : « Je ne sais pas le faire ». « Fais-le toi ! ».

Nous donnons dans le tableau qui suit le nombre de fois que les diverses conduites ont été observées.

TABLEAU 6.

	Feedback stéréotypé					Feedback expliqué					Probing				
Sujets	Cat	Jos	Mic	Nad	Tot	Gio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
Attend	0	0	0	0	0	2	0	0	4	6	0	0	0	0	0
Montre	2	0	0	0	2	0	2	0	4	6	0	1	0	0	1
R vers A	1	0	2	0	3	0	6	2	11	19	0	1	0	0	1
Q à A	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0
Appel à l'aide	0	0	1	0	1	1	0	1	2	4	0	0	0	0	0
Total	4	0	4	0	8	3	8	3	21	35	0	2	0	0	2

Les sujets du groupe feedback expliqué se distinguent à nouveau : ce sont eux qui ont produit le plus de comportements orientés vers l'animatrice (35) Les sujets du groupe feedback stéréotypé ont émis 4,5 fois moins et ceux du groupe probing 4 fois moins que les sujets du groupe feedback stéréotypé.

Il faut noter que la répartition n'est homogène dans aucun des trois groupes. Ainsi, deux sujets du groupe feedback stéréotypé n'ont émis aucun comportement vers l'animatrice : Jos. et Nad. Parmi les sujets du groupe probing, seule Lau. [1] a émis deux comportements

1. Il est possible que les conduites présentées par Lau. appellent une autre interprétation que celles présentées par les sujets des groupes feedback. Lau. s'est « adressée » à l'animatrice après avoir construit les deux chaises. Les autres conduites inscrites dans ce tableau ont été émises au milieu des tentatives du sujet.

vers l'animatrice. Par contre, tous les sujets du groupe feedback expliqué ont présenté des comportements d'attente et des conduites orientées vers l'animatrice. Toutefois, le nombre de ces conduites varient fortement (de 3 à 21).

Ces comportements orientés vers l'animatrice ainsi que des indices d'attente ne sont pas spécifiques à la phase « sans intervention ». Le tableau suivant mentionne les comportements du même type relevés lorsque l'animatrice réagissait aux tentatives des enfants.

TABLEAU 7.

	Feedback stéréotypé					Feedback expliqué					Probing				
Sujets	Cat	Jos	Mic	Nad	Tot	Gio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
Attend	0	0	25	0	25	0	6	2	0	8	0	0	0	0	0
Montre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R vers A	2	0	8	0	10	0	5	2	11	18	0	0	0	0	0
Q à A	8	0	4	0	12	0	0	0	0	0	0	0	0	0	0
Appel à l'ordre	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
Total	10	0	39	0	49	0	11	4	11	26	0	0	0	0	0

N.B. : Toutes les conduites reprises sous la désignation « attend » consiste en l'immobilité de la main au-dessus du bâtonnet posé.

Ces données présentent des similarités et des différences par rapport aux précédentes. Il est à noter que :

– aucune des conduites concernées n'a été observée parmi les sujets du groupe probing,

– deux sujets du groupe feedback stéréotypé présentent des conduites orientées vers l'animatrice (ce sont les mêmes que dans le tableau précédent),

– 3 sujets du groupe feedback expliqué présentent des conduites orientées vers l'animatrice ; seul Gio. n'en présente aucune,

– contrairement aux chiffres repris dans le tableau précédent, le nombre total des conduites relevées dans le groupe feedback stéréotypé est plus élevé que parmi ceux du groupe feedback expliqué. Ce

nombre particulièrement élevé est principalement imputable à un sujet : Mic.

Si nous réunissons les trois séries de données – à savoir le nombre total des conduites orientées vers l'animatrice pendant la phase d'intervention (N vers A (I)) et pendant le post-test (N vers A (II)) ainsi que le nombre d'abandons enregistrés à ce post-test –, nous obtenons le tableau suivent :

TABLEAU 8.

	Feedback stéréotypé				Feedback expliqué				Feedback de contrôle			
Sujets / Conduites	Cat	Jos	Mic	Nad	Gio	Mar	Pat	Vér	Jea	Lau	Rap	Sen
N vers A (I)	10	0	39	0	0	11	4	11	0	0	0	0
N vers A (II)	4	0	4	0	3	8	3	21	0	2	0	0
N abandons	0	0	1	2	1	1	1	2	0	0	0	0

A l'exception de Nad. (feedback stéréotypé), les sujets qui ont abandonné au moins une fois lors de la confection des chaises ont émis des conduites orientées vers l'animatrice pendant le post-test et le plus souvent aussi pendant la phase d'intervention de l'animatrice.

En définitive, les abandons constatés nous paraissent liés à la « dépendance » exprimée par certains enfants à l'égard de l'animatrice. Cette dépendance est elle-même liée à l'emploi de feedbacks directs et plus particulièrement de feedbacks expliqués. En outre, l'octroi de feedbacks directs par l'animatrice néglige l'apprentissage de comportements précurrents et/ou subséquents à l'encastrement de bâtonnets nécessaires à la réussite de la tâche. Par contre, le feedback de contrôle incite l'enfant à produire davantage de comportements susceptibles de lui fournir des indices pertinents à la résolution de la tâche.

L'analyse des stratégies utilisées par les sujets des différents groupes appuye cette interprétation.

Cinq stratégies différentes ont, en effet, été identifiées :

1. *choix immédiat :* l'enfant prend les bâtonnets comme ils viennent et les emboîte dès qu'il les a choisis.

2. *choix différé :* différents indices comportementaux témoignent d'une activité de recherche préalable à l'encastrement des bâtonnets. Cette recherche précurrente peut d'ailleurs procéder de manière très méthodique :
2. b. alignement des bâtonnets avant d'opérer un choix
2. c. choix systématique des plus grands ou des plus petits.
3. *contrôle immédiat :* l'enfant enfonce un bâtonnet, puis redresse le module et l'appuye sur le pied placé. Maintenant le module dans cette position, il essaye des bâtonnets en les enfonçant directement. Ainsi il constate immédiatement l'équilibre en laissant simplement le module s'appuyer sur le deuxième puis le troisième bâtonnet placé.
4. L'enfant compare les bâtonnets deux à deux mais un des bâtonnets est enfoncé dans le module récepteur, ce qui empêche toute comparaison.
5. *Comparaison rapprochée :* l'enfant prend un bâtonnet, ne l'enfonce pas, cherche un second bâtonnet qu'il applique au premier en veillant à ce que deux des extrémités soient ajustées.

Le tableau suivant mentionne les stratégies relevées dans les trois groupes lors de la confection des chaises.

TABLEAU 9.

	Feedback stéréotypé					Feedback expliqué					Feedback de contrôle				
Sujets	Cat	Jos	Mic	Nad	Tot	Gio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
Stratégie 1	0	7	10	0	17	4	14	6	15	39	0	0	0	0	0
Stratégie 2	11	4	5	0	20	6	10	1	9	27	9	6	12	0	38
Stratégie 3	12	0	5	0	17	0	0	5	0	5	0	6	0	4	10
Stratégie 4	0	9	0	31	40	0	0	0	0	0	0	3	0	0	3
Stratégie 5	0	0	0	0	0	0	0	0	0	0	0	0	5	6	11
Total	23	20	20	31	94	10	24	12	24	70	9	15	28	10	62

Afin de déterminer si les distributions obtenues dans chaque groupe sont homogènes, un chi-carré a été calculé. La valeur obtenue est de 128,38 significative à P.001 pour d.l. 8 (avec correction de Yates).

Deux données apparaissent de manière claire :
– aucun sujet du groupe de feedback de contrôle n'a utilisé la straté-

gie 1 du choix immédiat alors qu'elle est la stratégie la plus fréquente des sujets soumis au feedback expliqué (1),
– deux sujets du groupe feedback de contrôle, seulement, ont utilisé la stratégie 5 de la comparaison rapprochée ; aucun autre sujet n'a témoigné de telles conduites.

Les sujets soumis au feedback de contrôle produisent donc toujours au moins une activité de recherche préalable ou consécutive (S3) à l'encastrement d'un bâtonnet, alors que la tendance d'opérer par choix immédiat reste forte dans les deux autres groupes Cette activité précurrente permet aux sujets du groupe « probing » de discerner les stimuli inhérents au matériel susceptibles de contrôler son action.

b – Les tours à faces monochromes

Au cours de la cinquième séance, l'enfant est invité à construire des tours à faces monochromes en enfilant sur des tiges rigides fixées à un socle des blocs dont chacune des 4 faces est coloriée différemment. Pour cette activité, nous nous limiterons à l'analyse de la phase de « non-intervention » de l'animatrice.

La seconde phase de cette séance exigeait le placement par l'enfant de six blocs afin de compléter trois tours. Les résultats sont les suivants :

TABLEAU 10.

	Feedback stéréotypé					Feedback expliqué					Feedback de contrôle				
Sujets	Cat	Jos	Mic	Nad	Tot	Gio	Mar	Pat	Vér	Tot	Jea	Lau	Rap	Sen	Tot
Blocs corrections placés	6	3	2	4	15	6	6	6	0	[illegible]	6	6	6	6	24

Le probing paraît à nouveau la procédure génératrice du plus grand nombre de succès total. Toutefois, le feedback expliqué semble être presqu'aussi efficace. Parmi les sujets du groupe feedback stéréotypé, seule Cat. place correctement les six blocs.

L'étude des stratégies utilisées par les différents sujets permet d'élucider certaines différences au niveau des réussites et de préciser l'évaluation de la qualité des performances.

Les différentes stratégies identifiées peuvent être regroupées en deux catégories :
- sans vérification
- avec vérification.

Par stratégie « sans vérification », nous voulons signifier que le sujet s'attache à faire coïncider les faces directement présentes à ses yeux, mais ne se préoccupe nullement de la correspondance des trois autres séries de faces. Au contraire, la stratégie « avec vérification » implique que le sujet vérifie si toutes les séries de faces sont monochromes.

TABLEAU 11.

	Feedback stéréotypé	Feedback expliqué	Feedback de contrôle	Total
Sans vérification	30	32	2	64
Avec vérification	15	0	36	51
Total	45	32	38	115

Nous constatons que les trois distributions sont hétérogènes puisque $X^2 = 65{,}55$ S à P.001 pour d.l. 2.

Il aparaît donc clairement à travers ces données que les stratégies des sujets varient selon le type de réaction auquel ils sont soumis. Les sujets soumis au feedback de contrôle utilisent systématiquement la stratégie avec vérification. Par contre, les sujets soumis au feedback expliqué n'utilisent jamais cette stratégie avec vérification.

Cette activité des tours monochromes permet une analyse au niveau des stratégies du sujet et met en évidence la production de comportements subséquents à la réponse effective par les sujets du groupe probing. De plus, ces comportements de vérification sont spontanés c'est-à-dire qu'ils ne sont pas sollicités verbalement par l'animatrice. Il est possible que le probing apprenne progressivement aux enfants à émettre des comportements subséquents à la réponse effective dont la fonction serait de contrôler l'exactitude de cette réponse. Notre hypothèse consiste à supposer que cette propriété du feedback de

contrôle n'est pas relative à la construction des tours à faces monochromes, mais qu'elle s'affirme déjà à l'occasion des trois premières séances.

CONCLUSION

Au terme de notre premier article, nous avons souligné la référence au modèle que sollicitait continuellement le feedback de contrôle. Dans le cadre de ce type de « réaction » verbale, la correction est donc placée sous le contrôle des stimuli inhérents au matériel et n'est nullement contrainte par l'intervention verbale de l'adulte. A ce stade déjà, nous pouvions parler d'auto-régulation (et d'une certaine « autonomie » vis-à-vis de l'adulte) puisque l'émission d'une conduite de correction était conditionelle à l'examen du modèle et n'était pas impliquée – comme dans les feedbacks directs – par une évaluation négative de l'adulte.

Selon une interprétation constructiviste, la liberté ainsi laissée au sujet autoriserait et même encouragerait l'exercice des régulations inter-schemes, lequel constituerait le mécanisme fondamental de l'équilibration. En effet, selon l'hypothèse de Piaget, il faudrait « admettre que la totalité d'un système joue le rôle de régulateur à l'égard des régulations partielles, car il leur impose une norme extrêmement contraignante : se soumettre à la conservation du tout, donc à la fermeture du cycle des interactions ... » (PIAGET, 1975, p. 29). Or, lorsque le feedback de contrôle engendre une correction, la « décision » même d'opérer cette modification est sans doute dépendante de l'état des structures de connaissances sous-jacentes[1] et connexes. Malheureusement, l'intervention d'un tel processus consécutivement au feedback de contrôle reste hypothétique. En outre, si même cette régulation inter-schemes est effectivement stimulée par le feedback de contrôle, la dépendance de l'enfant à l'égard de l'adulte semblait rester importante. En effet, la possibilité d'entamer une tentative de correction consécutive à la constatation de différences

1. Les sujets choisis se situent – rappelons-le – à un stade intermédiaire de la construction des rapports topologiques. Il est probable que des sujets d'un stade inférieur aurait moins profité du feedback de contrôle. Il reste à en faire la vérification expérimentale.

constatées entre le modèle et la réponse était encore conditionnelle à l'émission par l'adulte d'un feedback de contrôle.

Au travers de notre seconde analyse, nous avons tenté de montrer que les sujets soumis au feedback de contrôle apprenaient, à émettre *spontanément* des conduites de vérification. Les données obtenues à la cinquième séance sont à cet égard assez probantes et semblent confirmées par les observations plus occasionnelles réalisées au cours des trois premières séances.

Il est possible que la production spontanée (et précédemment sollicitée) de conduites de vérification apparaisse progressivement rentable aux enfants par l'intermédiaire de la découverte des erreurs. Si cette interprétation est valable, l'efficacité du feedback de contrôle est inconcevable sans la possibilité d'apporter des corrections à la réponse initiale. En d'autres termes, si la découverte et la correction d'une erreur constituent l'élément renforçant des conduites de vérification, le feedback de contrôle perdrait une partie de son efficacité dans le cadre d'un apprentissage sans erreur

A ce second niveau de l'analyse, nous pouvons réellement parler d'auto-régulation, en ce sens que la conduite de vérification ou d'évaluation de la réponse effective (précurrente à la modification éventuelle de cette réponse) est émise spontanément par l'enfant et n'est pas directement sollicitée par l'adulte. Il semble donc que le feedback de contrôle amène progressivement l'enfant préopératoire à produire spontanément un comportement supplémentaire susceptible de lui fournir des indices propres au contrôle et à la correction d'une réponse ultérieure. L'émission par un organisme de telles réponses, agissant sur les variables dont une autre réponse de son répertoire est fonction, constitue selon l'analyse proposée par SKINNER (1953, p. 228) un cas d'auto contrôle.

Cette perspective adoptée par différents chercheurs américains a permis de démontrer la valeur renforçatrice d'une procédure d'auto-renforcement (BANDURA et PERLOFF, 1967) correspondant à la séquence :

« auto-imposition d'une norme comportementale → réponse → auto-évaluation → auto-renforcement (octroi d'un Token) ».

Par la suite, JOHNSON et MARTIN (1972) ont montré que le comportement d'auto-évaluation pouvait à son tour joué le rôle de renforcement secondaire ou conditionné (en l'absence de tout renforce-

ment social ou autre). Si ces études ainsi que d'autres (KANFER et MARSTON, 1963 (a) et (b) ; LOVITT et CURTISS, 1969 ; JOHNSON, 1970) ont bien analysé la fonction dynamique de l'auto-évaluation positive suivie ou non d'auto-renforcement aucune recherche ne s'est attachée à préciser la fonction régulatrice de l'auto-évaluation négative. Or, selon nous, ce comportement peut acquérir – au terme d'un apprentissage adéquat – une fonction de redirection du comportement erroné.

Il appartient à des recherches ultérieures de préciser les différents modes d'apprentissage et de maintien de cette fonction cognitive de l'auto-évaluation négative.

Corrélativement à l'émission de ces conduites de vérification, nous avons étudié les conduites enfantines orientées vers l'adulte, et, au travers de ces conduites, nous avons tenté de montrer que les feedbacks directs amplifiaient la dépendance des enfants à l'adulte. Des regards et quelquefois des paroles des enfants soumis à ces réactions expriment – croyons-nous – la nécessité de s'en référer à l'adulte. Cette dépendance expliquerait les échecs de ces sujets à la construction des chaises. Ces enfants auraient appris à chercher et à trouver dans le comportement verbal de l'adulte des indices propres à les guider dans les conduites à adopter. Dans les situations où l'adulte s'abstient de « réagir » aux comportements de l'enfant, ce dernier est incapable de réaliser la tâche proposée. Au contraire, les sujets soumis au feedback de contrôle apprennent à émettre spontanément des conduites d'exploration du matériel. Le feedback de contrôle amène donc l'enfant à produire un comportement d'autant plus adapté qu'il n'est pas conditionnel à la présence de l'adulte et, par le renvoi au matériel continuellement sollicité, élimine les conduites orientées vers l'adulte. Par contre, les feedbacks directs renforcent ces comportements, dont la fréquence relative s'amplifie au fil des séances.

Cette constatation confirme donc notre hypothèse générale concernant l'existence d'une double fonction du feedback. La « réaction » de l'adulte agit donc comme régulateur à la fois de l'apprentissage cognitif et des interactions sociales. Cette complémentarité des fonctions cognitives et socio-affectives du feedback correspond à une intrication des conduites cognitives et socio-affectives de l'enfant, lesquelles nous sont apparues concourir toutes deux à la réussite ou à l'échec des activités de type II.

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RÉSUMÉ

Cette recherche montre que l'emploi d'un feedback avec sollicitation d'un auto-contrôle incite progressivement les enfants préopératoires à vérifier et à corriger leur réponse avant même l'émission de tout feedback par l'adulte. Par contre, l'emploi du feedback stéréotypé ou expliqué provoque chez les enfants des conduites de dépendance à l'égard de l'adulte.

Trois groupes équivalents de sujets préopératoires ont été constitués sur la base d'épreuves piagétiennes. Les enfants sont confrontés à une tâche impliquant des notions topologiques durant cinq séances. Dans un groupe, les réponses des sujets sont évaluées par un feedback stéréotypé positif (c'est juste) ou négatif (ce n'est pas juste) selon la valeur de la réponse. Dans un second groupe, chaque feedback est complété par une explication (c'est juste parce que... ; ce n'est pas juste parce que...). Dans un troisième groupe, les sujets sont invités à auto-évaluer et à vérifier leur performance (tu crois que c'est juste, regarde un peut voir).

ZUSAMMENFASSUNG

Analyse vom regulatorischen Effect dreier Arten von Rückkopplung (Stereotyp, Spezifisch, und Rückkopplung mit Selbstkontrolle) auf Kinder im voroperativen Stadium.

II. Erwachsenen Orientiertes Verhalten und Selbstkontrolle.

In dieser Forschungsarbeit wird erwiesen, dass bei Kindern im Voroperativen Alter der Gebrauch der Rückkopplung durch Aufforderung zur Selbstkontrolle zur eigenständigen Überprüfung und Korrektur der Antworten führt, noch bevor Erwachsene durch ihr Urteil eine Rückkopplung herbeiführen. Dagegen wird festgestellt, dass stereotype Rückkopplungen oder Erklärungen beim Kinde Verhaltensmerkmale der Abhängigkeit gegenüber dem Erwachsenen fördern.

Durch Prüfungsverfahren nach Piaget, wurden drei gleichwertige Gruppen von Kindern im Voroperativen Stadium zusammengesellt. Während fünf Sequenzen wurden diese Kinder mit Aufgaben aus dem Bereich der Topologie konfrontiert. In der ersten Gruppe wurden sie durch Stereotyp positive (richtig so) oder negative (falsch !) Rückkopplungen bewertet. In der zweiten Gruppe, wurden die stereotypen Rückkopplungen jeweils durch Erklärungen Belegt (Richtig... oder falsch... weil... !). In der dritten Gruppe schliesslich wurden die Kinder zur Selbstkontrolle angehalten um ihre Leistung zu überprüfen (Sie mal ob's richtig ist ; schau doch mal nach... !).

SUMMARY

Analysis of the regulatory effect of three kinds of feedback (stereotype, specific, and feedback with self-control) on preoperational subjects.

II. Adult oriented behaviour and self-control.

This research shows that using a feedback with selfcontrol solicitation gradually incites children of the preoperational stage to verify and correct their answer even before the adult gives a feedback. On the other hand, using a unspecified or specific feedback induce children to dependency behaviours toward adult.

Three equivalent groups of children at preoperational stage have been constituted on the basis of Piagetian tasks. Children are requested during three sessions to solve problems including topological notions. In one group, children's answers are unspecifically evaluated ('it's right' or 'it isn't right'). A second group receives specific feedback ('it's right because ...' or 'it isn't right because ...'). A third group is self-evaluated ('You thing it's right, look and see').

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EFL IN BELGIAN ELEMENTARY SCHOOLS. SOME REMARKS IN THE LIGHT OF A FLEMISH EXPERIMENT *

by

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1. THE EMPIRICAL BASIS

In 1970 we started an educational experiment 'English as a foreign language (EFL) in the primary school'. The facilities provided by the Educational Laboratory of the State University of Gent enabled us to realize the idea without going through a lot of clerical work. This institute is regularly attended by some fifty children who receive, in the course of their six year stay, also the elementary schooling coming up to the legal requirements of primary education. Did we manage to find a suitable group for pilot experimentation, we still had to deal with some adventitious aspects of the laboratory situation. We shall discuss them with reference to the more general state of affairs in non-laboratory, Flemish primary schools.

1.1. *Multilingualism and language planning in primary education*

Belgium is a multinational country. It is also officially a multilingual country [1]. It is divided in three linguistic areas (arranged in order

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1. See for instance Mackey & Verdoodt (1972).

of size) : the Flemish-Netherlandic [1] speaking area in Flanders (the North), the French-speaking area in Wallonia (the South), and a small German-speaking area in the East of Wallonia. The district of Brussels and its environment (in Flanders) is bilingual. Instruction in Belgium is *unilingual* [2] : the languages of instruction are Netherlandic in Flanders, French in Wallonia, German in some schools in the Eastern districts and French or Netherlandic in Brussels. Language use was regulated by law (30.07.63) after a long history of *bilingual* schooling in which French was the only or alternate medium of instruction in several schools in Flanders. The same law regulates 'second' language instruction. It still specifies the meaning of second in line with the traditional bilingual situation. According to this definition French is the second national language in the Flemish area while Netherlandic (or in some districts German) is the second national language in Wallonia. As opposed to the situation in the district of Brussels, where the teaching of the second language as a subject is compulsory from the third class, it is facultative in the other areas. It *may* be organized from the fifth year at the rate of three hours per week. These are the fundamentals of national language planning at elementary school level.

1.2. *Language teaching at the Laboratory*

We shall deal with their factual outcome below and confine ourselves here to the language situation at the Laboratory. Being situated in Flanders, in the Flemish-Netherlandic area, the language of instruction is Netherlandic. In view of the observation that the home language of the majority of Flemish children is a Flemish-Netherlandic variety and that they have to shift to Netherlandic at school, the children at the Laboratory are to a certain extent advantaged. Many of them are raised in families where the standard language is spoken : they do not have to face the kind of diglossia

1. We indicate Flemish-Netherlandic in this way to distinguish it from the Dutch-Netherlandic varieties spoken in the Netherlands.

Let us denote the mutual standard language as *Netherlandic* (See VAN HAERINGEN 1960).

2. An exception is made for some international or European schools (e.g. in Mol and Brussels).

of many other Flemish children. Some of the children, however, may experience the unilingual schooling as bilingual, because (one of) their primary (home) language(s) is French [1]. This language had been introduced in the curriculum several years before we started the English program. From the third class it is taught to all pupils, four hours a week. This position of French, comparable to the place in the curriculum it has in Flemish schools in the bilingual district of Brussels, was preserved when we added English in the fifth and sixth class at the rate of four times half an hour per week. Considering these rather special circumstances we would not be surprised if one knit his brows and started asking questions about the opportuneness of implementing another foreign language in the basic curriculum. So did we. From several sources pros and cons were suggested. Finally we decided to try it out for some years in order to come to a somewhat more balanced view on foreign language teaching and learning in general and in Flanders more in particular (see SPOELDERS 1972 ; SPOELDERS & VAN BESIEN 1972). L. G. ALEXANDER's *Look, Listen and Learn* [2] constituted the backbone of our English program. Some additional modules compensated for neglected aspects in the cognitive (e.g. pluralism in foreign language learning and constrastive aspects) [3] and the affective domains (e.g. attitudes toward foreign language learning and toward the target culture) [4]. As a matter of fact we were convinced that, if a foreign language was to be introduced early, before everything else one should make every effort to make the start as effective as possible, especially on the affective level, keeping all pupils indemnified against loss of motivation or aspiration for all further foreign language study. All in all, from the learner's viewpoint, the results of the experimental introduction were surprisingly well, taken into consideration the limited period of time, the arbitrary choice of the course and the supplementary weighting

1. A similar situation exists in many schools in Flanders for the immigrant children, albeit that their linguistic problems are embedded in the larger context of enculturation.

2. At the time Kaleidoscope (English for Juniors), a teaching-learning package developed by the Language Teaching Centre of York, was being experimented with, a.o. in a Flemish school.

3. See SPOELDERS 1974b.

4. See SPOELDERS 1974a.

of another modern language on the curriculum. Many pupils were motivated to take English in secondary education as well, which would give them an advantage on pupils starting without prior experience. We shall deal with the feedback of this experiment more in detail below, when we discuss an exploratory study into some affective factors in foreign language study and choice. But before we can do so we must pick up the thread of our story on foreign language planning in Belgium. We can do so while following our pupils into the first year of secondary education.

2. Foreign Language Planning in Secondary Education

2.1. *Facts* ...

We have already noticed that the so-called second national language may be on the basic curriculum under specified conditions. It is, however, *statutory obliged* to take another language in secondary education. A circular letter of 1971 (15.01) lays down the lines of national policy concerning the organization of language courses. From the first year of study, the head of the family has to choose *a* second language for his child. In this letter, second does not refer to second national language any longer, but it is taken in the sense of first foreign language. A parent whose child attends a school in the Flemish-Netherlandic area may generally choose, in that first year, between French, English and German. In the French-speaking area people choose between Netherlandic, English and German. After one month the choice becomes effectual and the chosen language remains the first foreign language for the pupil during his schooling education. In subsequent years the parents will choose among a given series of foreign languages if other foreign languages are included in the curriculum. In the light of the national tradition of a second national language the national authorities have formulated a preferential treatment for French and Netherlandic, in the Flemish-Netherlandic and French-speaking area respectively. It holds that any school in the Flemish-Netherlandic area must organize a French course, even if only one pupil takes it. Netherlandic has been allotted an equivalent position in the French area. For the other languages a quorum of eight enrolments is necessary. This rather bizar restrictive

clause is contested both in Flanders [1] and Wallonia, though in the former only by a (political) minority up to now.

In the Conseil de la Culture Française a political majority has just voted (December 1976) in favour of a decree which puts all languages on equal terms. This means that in Wallonia Netherlandic is not longer considered as favoured second national language, nor as first foreign language, but as foreign language [2].

2.2. ... *and Fiction*

Through this a certain official cachet is given to a trend which has been growing in Wallonia for several years. In this part of Belgium, Netherlandic is gradually being removed from the curriculum and English is filling up the vacuum without any difficulty. We remain somewhat reserved about the mentality of throwing away the child with the bath-water, but we can understand the trend perfectly and even argue in favour of a similar decision in Flanders.

We do not have the official statistical data at our disposal [1], but we can infer the following components of this trend in Wallonia (first year of study) :

a) Netherlandic as a first foreign language is chosen by a decreasing number in the public schools. In the free schools people do not respond to the trend to the same degree ;

b) English will appear as the first foreign language : this is already observable in the public educational system [2] ;

c) what is stated under a) and b) is a consequence of the situation in the primary schools where Netherlandic is becoming inferior to

1. A.o. by the Flemish Association of IATEFL.

2. The Council of State, however, has advised that the French Cultural Council has acted beyond its authority, and that only National Legislature is competent in these matters.

1. The *Ministère de l'Education Nationale et de la Culture Française* did not respond to our request for statistical data. Altogether (all years, all pupils) in 1976 about 24 % studied EFL and 70 % NFL (first choice).

2. The affiliation of the school to the free or public educational system, together with the order in which the foreign languages are chosen, created some problems for the design (and interpretation) of some large scale international survey studies, such as IEA-French (Glyn Lewis & Massad 1975, 53) in which the French-speaking area of Belgium was included.

English too (exception made perhaps in the free schools). Since this has been observed for years, we wonder if the foreign language courses in elementary education have been organized on a non-compulsory basis.

Heading North again we shall have a look at the available data first (table 1, figure 1) [3].

TABLE 1.

Pupils from the Flemish-Netherlandic area in French and English courses in the first year of secondary education (1972-1975).

Schoolyear	English		French	
	Public schools (*)	Free schools (*)	Public schools	Free schools
1972-73	1769	2647	15600	30383
1973-74	2427	2838	15347	31076
1974-75	2554	2743	14824	31635

(*) Public schools are organized by official authorities (state, local authorities), free schools are financed by the state, but organized under private initiative.

What can be concluded from these figures ?

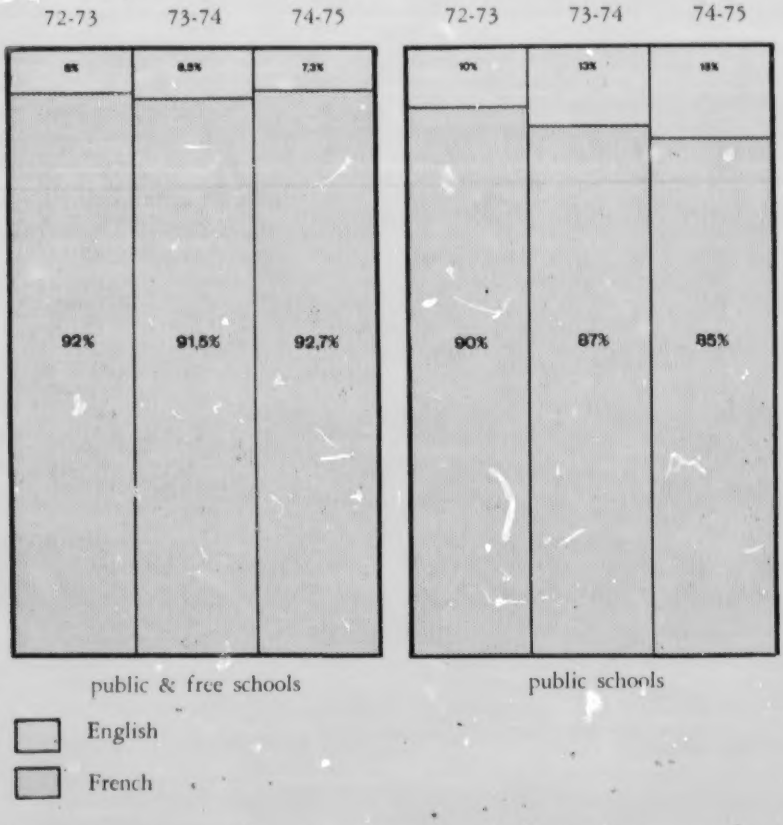
a) In the Flemish-Netherlandic area, a large majority of parents still chooses the 'preferred language', i.e. French as the first foreign language for their children. This pattern remains almost constant over three years (approximately 92 %) ;

b) Taking public schools seperately, we observe from 1972-1975 a 50 % rise in the number of pupils who take English. This does not affect the mean percentage, however, due to the large unalterated majority of pupils enlisted in the free educational system ;

c) All this may partially be explained by the large number of pupils taking French in the primary school. We can infer from official statistics that there is a tendency to insert French in the regular basic curriculum (table 2), not leaving it a non-compulsory subject.

3. Ministerie van Nationale Opvoeding en Nederlandse Cultuur.

FIGURE 1 : *Percentage of pupils from the Flemish-Netherlandic area enlisted in either a French or an English course in the first year of secondary education (1972-1975).*



Moreover, this *non-competitive position of French* is even strenghtened by the fact that many schools organize a French course from the third class. This means that a large majority of pupils has been studying French for at least 2 and in many cases even for four years before passing to the secondary school [1]. If organized in the 3rd and 4th

1. For instance, in the province of East-Flanders, the total number of pupils enlisted in a French course in the primary school is significantly larger than

class the course must be non-compulsory, but many parents fear that, if their child does not attend the course, it will be disadvantaged for the next years.

TABLE 2.

Pupils from the Flemish-Netherlandic area enlisted in a French course in primary education (1972-1975).

Schoolyear	During regular lessons	After regular lessons	%	Totals
1972-73	187 867	56 084	23	243 951
1973-74	188 027	51 987	21.6	240 014
1974-75	188 312	45 380	19.3	233 692

3. AN EXPLORATORY STUDY INTO SOME SOCIOLINGUISTIC FACTORS

In order to come to grips with the underlying beliefs of Flemings we investigated the overt behaviour toward foreign languages and foreign language speakers. With AGHEVSI & FISHMAN (1970, 137) we were convinced of 'the relevance of attitude studies to such sociolinguistic topics as language choice in multilingual societies'.

In this exploratory study (SPOELDERS 1975), part of which will be discussed here, we tried to tap the foreign language attitudes of Flemish-Netherlandic speakers (adults and children), their attitudes toward native speakers of English and French and community-wide stereotypes in relation to these psychological objects.

3.1. *Samples and methodological procedure*

In the mid-year of 1973-1974 we took samples from three Flemish populations [1], i.c. a) a group of 110, thirteen year old pupils from first classes in secondary schools ; b) the parents of these pupils ;

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the total number of pupils in those classes that come after the fourth class :
1973-74 : 56.732 vs 41.853
1974-75 : 54.958 vs 42.724

1. Children from bilingual homes and immigrant children were excluded.

c) a group of 97 students, graduating in modern languages in three teacher training colleges.

Questionnaires included the variables we wanted to investigate. We confine ourselves here to those which are relevant to the present topic, and which are common to the three samples. In the first place they are the instruments for exploring the attitudes toward English and French, and toward English-speakers and French-speakers. We operationalize attitude by means of those bipolar adjective scales of a semantic differential that load high on the evaluative dimension of the total semantic space of each concept. The subjects were asked to rate the language concepts on twenty-nine scales and the person concepts on fourty-seven 7-point scales altogether. A positive attitude is expressed in a high score on the evaluative scales.

Secondly, we devloped a measure for the stereotypes. To that affect we used the matched-guise technique. This procedure involves subjects listening to apparently different speakers reading the same neutral passage of prose and then being required to evaluate speakers on bipolar adjective rating scales. The speakers are in fact actually one and the same person using realistic guises of English and French [1]. According to GARDNER (1973, 135) the use of the semantic differential makes it possible to define the extent to which a total sample perceives one end of the bipolar adjective scale as characteristic. He suggests a numerical index for the degree of polarisation of the ratings [2]. We may speak of stereotyping when the mean evaluation of the total sample on a rating scale (X) deviates significantly from a neutral mean (in this case 4). In this operational definition of stereotype the focus is on the agreement that one of the bipolar adjectives is clearly associated with the ethnic group label or with the foreign language label. We define arbitrarely the stereotype in terms of the ten characteristics for which polarization is the highest (assumed significant t-tests) [3]. We could calculate

1. French-English balanced bilinguals were recorded.

2. $\frac{(X - \mu)\sqrt{N}}{SD}$, a statistic test distributed as t with N-1 degrees of freedom.

3. Appendix 1 illustrates this by means of one of the basic tables from which the information is retrieved.

stereotype indexes per subject as well in summing up the individual ratings on the ten scales, one of the poles is defining the stereotype. We reverse the ratings for those scales for which the sample mean is < 4, so that a high stereotype index of a subject means that he is agreeing to a high degree with the stereotype consensually held by the total group.

In the third place we included a contact-measure, expressing the extent to which subjects had already been in contact with the French and the English, and an index of the orientation toward foreign language study. As to the latter we adapted the items suggested by GARDNER & LAMBERT (1972) for measuring the instrumental and integrative orientation toward foreign language study.

3.2. *Results*

3.2.1. *Attitudes*

On the whole the attitudes toward the four psychological objects are fairly positive. In the sample of children we observed a slight tendency in all sub-groups (girls/boys ; E-pupils/F-pupils) to evaluate English and the English-speaker even higher than French and the French-speaker. F-pupils expressed a more positive attitude toward French (significant on the .01 level) than did E-pupils. There are no significant differences concerning English and the ethnic labels, exception made for the significant difference (.01) between girls and boys on English-speaker. For one or another reason girls seem to evaluate the E-speakers even higher than boys : this cannot be attributed to the sex of the teenager-guises. Parents who chose French as foreign language for their children (F-parents) tended to evaluate French more positively than English, while E-parents expressed a reverse tendency. No significant difference was found between these two sub-groups as to attitudes toward the E- and F-speakers. F-parents evaluated French and the French-speaker higher than did E-parents (.01 and .05 respectively).

The student teachers have a more positive attitude toward English than toward French (.01). If we exclude from this sample those students majoring in English (E-teachers) we observe no difference. As could be expected F-teachers express a more positive attitude toward French than do E-teachers.

3.2.2. *Contact-measures and motivational orientation*

The answers on the contact items suggest that our pupils have had little contact with foreign language speakers, and that the school does not help them very much to get into contact with them. The contact-indexes of E-parents point out that they have been more frequent into contact with English-speakers than have F-parents (.05). This is not the case for the contact with French-speakers : both F- and E-parents report to have (had) as much contact. When we examine the relative importance of contact per sub-group, we do not find any difference in E-parents. F-parents, on the other hand, have more (direct or indirect) contact with French than with English culture (.05). No differences are found between F-teachers and E-teachers on the contact measures, though in the latter group more contact is reported with the English culture and the English (.01).

These results suggest that the theoretically favourable aspect of multilingualism in Belgium does not exert much practical influence on the perceived contact with French culture by Flemish people [1].

As to the motivational aspect, we were anxious to pin down how our subjects would estimate the relative importance of the two components of the factor motivation. These components have been described as integrative orientation and instrumental orientation. A learner with an instrumental motivation is one who has little interest in the people who speak the target language, but nevertheless wants to learn the language for more self-oriented or utilitarian reasons such as getting ahead in one's occupation or gaining social recognition from one's own membership group. An integratively oriented learner is interested in learning the second language in order to meet and communicate with valued members of the target language community. Eight items (for each kind of orientation four) covered this factor : subjects had to mark their degree of agreement with the statements. On the whole there are no significant differences in the extent to which the pupils agreed with either instrumental or integrative statements. E-pupils as well as F-pupils seem to display a comparable

1. GLYN LEWIS & MASSAD (1975, 24) should be corrected. They write : 'Languages learned in mass bilingual situations (like French in the Flemish area of Belgium) are not to be identified with the French taught in England..., where the language(s) lack such strong demographic support'.

mixed attitudinal orientation toward foreign language study. It should not be ignored that between twenty-five and thirty-five percent of this sample has not formed a clear idea on the matter yet. There is a trend in E-parents as well as in E-teachers, to estimate the integrative orientation higher than the instrumental orientation (.05 and .01 respectively).

3.2.3. *Foreign language stereotypes and ethnostereotypes*

How do Flemings perceive the English and French and what about the consensually held beliefs about English and French ? Before going into detail we would like to report the inter-sample stereotyping activity. A factor-analysis (Hoteling Principal Axix, Varimax rotation) on the reactions toward each concept revealed that :

a) the attributes that define the stereotypes (as defined above) cluster to a great extent ;

b) in the case of the ethnostereotypes there are good reasons to extract and denominate a so-called stereotype factor, characterized by the high loadings received from the stereotype-attributes. It may be argued from this that an individual who agrees with one attribute of the ethnostereotype is likely to agree with the rest of them too ;

c) in all samples the ethnostereotypes include several positive evaluative attributes. Since they are consensually defined, it seems reasonable to assume that the evaluative nature of the positive attributes contained in the stereotype mirrors positive community attitudes toward the particular language speakers.

d) among youngsters and adults a large consensus in stereotypical beliefs can be noticed. In many cases more than 2/3 of the attributes which make up a stereotype are common. This seems to point into the direction of an early consolidation of stereotypes (LAMBERT & KLINEBERG 1967). The least conformity exists in relation to the concept French-speaker. The dubious character of this concept is also revealed in the results of a correlated sign test which shows that the different groups are indeed more prone to ascribe attributes to the concept English-speaker than to the concept French-speaker. Another bizar result from this sign test is that children are less inhibited to ascribe characteristics to the exponents of the outgroups French- and English-speakers than their parents or the student teachers.

TABLE 3.

Ethnostereotypes, all samples.

Pupils		Parents		Student teachers	
ENGELSTALIGE (English speaker)					
1 gezond (healthy)		beschaafd (cultured)		beschaafd (cultured)	
2 vriendelijk (friendly)	E+	beleefd (polite)	E+	sympathiek (sympathetic)	E+
3 verstandig (intelligent)	E+	handig (clever)	E+	beleefd (polite)	E+
4 lief (nice)	E+	goed (good)	E+	prettig (pleasant)	E+
5 goed (good)	E+	elegant (elegant)	E+	aangenaam (amusing)	E+
6 aangenaam (amusing)	E+	fatsoenlijk (decent)	E+	elegant (elegant)	E+
7 sympathiek (sympathetic)	E+	vriendelijk (friendly)	E+	zelfzeker (sure of oneself)	
8 beleefd (polite)	E+	prettig (pleasant)	E+	flegmatiek (phlegmatic)	
9 elegant (elegant)	E+	groot (tall)		nauwkeurig (accurate)	E+
10 beschaafd (cultured)		verstandig (intelligent)	E+	vriendelijk (friendly)	E+
FRANSTALIGE (French speaker)					
1 beleefd (polite)	E+	praatziek (talkative)		praatziek (talkative)	
2 beschaafd (cultured)		beschaafd (cultured)		spontaan (spontaneous)	
3 fatsoenlijk (decent)	E+	beleefd (polite)	E+	beschaafd (cultured)	
4 verstandig (intelligent)	E+	vriendelijk (friendly)	E+	gevoelig (sensitive)	E+
5 proper (tidy)	E+	gevoelig (sensitive)	E+	muzikaal (musical)	
6 goed (good)	E+	elegant (elegant)	E+	avontuurlijk (adventurous)	
7 gezond (healthy)		lief (nice)	E+	gelukkig (happy)	
8 nauwkeurig (accurate)	E+	verstandig (intelligent)	E+	opgewonden (excited)	
9 elegant (elegant)	E+	spontaan (spontaneous)		elegant (elegant)	E+
10 lief (nice)	E+	sympathiek (sympathetic)	E+	boeiend (captivating)	E+

E = evaluative scale
+/- = direction of evaluation

TABLE 4.

Foreign language stereotypes, all samples.

Pupils		Parents		Student teachers	
FRENCH					
1 bekend (familiar)		nuttig (useful)	E+	rijk (rich)	
2 nuttig (useful)	E+	bekend (familiar)		nuttig (useful)	E+
3 belangrijk (important)	E+	waardevol (valuable)	E+	bekend (familiar)	
4 waardevol (valuable)	E+	belangrijke (important)	E+	waardevol (valuable)	E+
5 deftig (solemn)		mooi (beautiful)	E+	kleurrijk (coloursful)	
6 praktisch (practical)		praktisch (practical)		gevarieerd (varied)	
7 levendig (lively)	E+	internationaal (internat.)		levendig (lively)	E+
8 economisch belangrijk (econom. important)		levendig (lively)	E+	belangrijk (important)	E+
9 ingewikkeld (complicated)		populair (popular)		muzikaal (musical)	
10 warm (warm)		economisch gelangrijk (econom. important)		mooi (beautiful)	E+
ENGLISH					
1 bekend (familiar)		nuttig (useful)	E+	praktisch (practical)	
2 belangrijk (important)	E+	praktisch (practical)		gevarieerd (varied)	
3 nuttig (useful)	E+	bekend (familiar)		waardevol (valuable	E+
4 populair (popular)		economisch belangrijk (econom. important)		nuttig (useful)	E+
5. waardevol (valuable)	E+	populair (popular)		bekend (familiar)	
6 prettig (pleasant)	E+	belangrijk (important)	E+	belangrijk (important)	E+
7 mooi (beautiful)	E+	waardevol (valuable)	E+	populair (popular)	
8 praktisch (practical)		prettig (pleasant)	E+	internationaal (internat.)	
9 levendig (lively)	E+	internationaal (internat		economisch belangrijk (economically important)	
10 economisch belangrijk (econom. important)		meerderwaardig (superior)	E+	mooi (beautiful)	E+

Let us have a look at the attributes themselves. Table 3 represents the ethnostereotypes of the different samples. It should be noticed that, when they described the English-speaker, more than seventy-five percent of the subjects in every sample situated him/her in England. The French-speaker, on the other hand, is situated in France by a majority of the pupils (eighty-five percent), by fifty percent of the parents and by thirty-five percent of the student teachers. Only a minority localizes him/her in Wallonia (three percent of the pupils, twenty percent of the parents, and 25 percent of the student teachers). These figures coincide with the relatively low contact-indexes. We have already observed that there is less consensus in labeling the French-speaker, though a striking unanimity exists in the adults to characterize him/her in the first place as being 'talkative'. E-parents mark also 'unrelated' as a number one attribute.

The labels of the foreign languages are printed in table 4. We computed the inter-group differences on the attributes. Among them is 'international', which happened to be one of the key-words in the theme of the 9th IATEFL-conference. French is never characterized as 'national' (which is in line with the idea developed above). We tested for significant differences between the sets of responses to the scale 'national-international' (WARR & KNAPPER 1968: 60). From table 5 we may conclude that the children are not sure about their judgment. They still rate near the neutral point 4. Adults agree on the internationality of both languages (high ranks), though in all cases, English receives a higher rating. The ratings of the grown-ups differ significantly from those of the children. Student teachers rate this aspect for English even higher than parents[1]. Parents seem to agree to assign the characteristic 'superior' to English. Some other attributes received a significantly different weight in the sub-groups of each sample. Among them are the 'popularity' of English which is rated higher by E-parents than F-parents (.05), and the characteristics 'valuable' (waardevol) and 'familiar' (bekend) of French which are agreed with by F-parents to a greater extent (.05). This coincides with another finding of the study namely that F-parents reported to

1. On the overall stereotype-characteristic *useful* English receives higher ratings than French (all samples). Moreover English is perceived as easy and simple, while French is rated as difficult and complicated (all samples).

have a better knowledge of French than English (all skills .01). Further on, important differences are found on the attributes 'difficult' (moeilijk), 'complicated' (ingewikkeld) and 'boring' (saai/negative evaluation) of the French stereotype of E-pupils (.01). The characteristic 'complicated' is also included in the French stereotype of E-parents. The sub-groups of student teachers agree much more on the English stereotype than on the French stereotype (in the latter case, F-students rate almost all attributes higher than F-students).

TABLE 5.

Differences in ratings on the scale 'national-international' for the stereotypes French and English.

Sample	N	Labels	m	SD	t	sign.	rank
Pupils	107	English	4.467	2.523	1.92	–	28
	107	French	4.654	2.137	3.16	.01	22
Parents	98	English	6.214	1.761	12.89	.01	9
	97	French	5.946	1.822	10.53	.01	7
Student teachers	97	English	6.701	0.892	29.83	.01	8
	92	French	5.772	1.392	12.21	.01	14

Pairs of samples	Label	m	SD	m	SD	t	sign.
Parents / Student teachers N = 98 N = 97	ENGLISH	6.214	1.701	6.701	0.892	−2.51	.05
Parents / Pupils N = 98 N = 107	ENGLISH	6.214	1.701	4.467	2.523	5.86	.01
student teachers / Pupils N = 97 N = 107	ENGLISH	6.701	0.892	4.467	2.523	8.59	.01
Parents / Student teachers N = 97 N = 92	FRENCH	5.946	1.822	5.772	1.392	.74	–
Parents / Pupils N = 97 N = 107	FRENCH	5.946	1.701	4.654	2.137	4.80	.01
student teachers / Pupils N = 92 N = 107	FRENCH	5.772	1.392	4.654	2.137	4.43	.01

4. Implications

Which educational inferences can be drawn from the elements of the actual foreign language situation and the exploratory study into some psychological factors revealed above ? On the one hand we shall suggest the direct repercussions for foreign language planning. On the other hand some implications for foreign language teaching and learning in general and for EFI in particular will be discussed.

4.1. *For foreign language planning*

a) Larger parts of the language communities in Belgium do not regard any longer the mutual native languages as second (national) languages. This has not been reflected in the national foreign language policy yet. Both French- and Flemish-Netherlandic-speaking communities should be able to make up their own language planning, corresponding to the ideosynchratic set of sociolinguistic conditions and perceptions of the relative importance of foreign language study and foreign languages. Within each system it should be seen that the planning comes up to the possibly different opinions in different segments of the school populations.

b) Flanders happens to be a part of a small country, which culture and language are permanently bombed by the language imperialism of neighbour countries [1]. Many Flemings need an active knowledge of several foreign languages. Therefore, a first foreign language must be integrated as a core subject in the basic curriculum, not only for its general value, but for its utiliatarian value as well. Two foreign languages (i.c. English and French) which have to a great extent equivalent educational value would impose too heavy a burden on the

1. Characteristic examples of the present Anglomania may be observed in shopkeepers, who have replaced their (often French) business-signs by English ones. Let your fingers do the walking through the yellow pages... and you will easily find, sometimes laugh-stirring, aspects of this tendency. Other illustrations can be found in the entertainment industry. We do not have the financial resources to fight against this surface level tendency. Neighbouring language imperialistic cultures (German, French) dub for example English spoken films (on TV), while we are used to sub-titles.

basic curriculum. Furthermore it can be argued that in the Belgium of the near future, these two languages will be functionally equivalent as well. In our opinion, the intrinsically valuable goal of receptive bilingualism (implying for the Flemish-Netherlandic speaker a receptive knowledge of French, and supposing a receptive knowledge of Netherlandic in the French-speaker) has proved to be too difficult a target in the past. We do not predict a more favourable future, given the present political situation (especially in the French-speaking area). It may turn out that English will become the active instrument, not only for international, but also for intranational communication.

c) Up to now, the basic foreign language has been the preferred second (national) language. Statutory people had no choice. The non-competitive position of French, with its far-reaching impact on the study of foreign languages in secondary education, must be broken. From an organizational and technical point of view it is realizable to let parents (children) choose between English and French in primary education [1]. In a first phase both should have equal chances. The programming of foreign languages in secondary and further education provides that there is time enough for pupils to study almost any other language they are interested in.

d) One should have done with unwarranted affective arguments concerning the study of one language in favour of the other. In this field are situated for example the arguments based on the interpretation of the foreign language (choice) as a part of the message of nationalism : i.e. 'French is rather chosen by (good/bad) Belgian nationalists and English is rather chosen by (good/bad) Flemish sub-nationalists' (see also FISHMAN 1972).

e) Educational authorities could set up an instructional campaign in order to objectify beliefs about foreign language education and to pull the whole foreign language business and policy out of irrational ipsedixitisms and mysticism. To that effect they may lead the conversation to rational criteria for foreign language choice. They can gather and spread information concerning the actual statistics of

1. A recent enquiry by the Ministry of Education (Feb. 1977) shows that 71.5 % of the respondents are in favour of fixing foreign language choice at an earlier time, i.e. in primary education. In that case 30 % would choose EFL.

foreign language enrolment and achievement, the foreign language choice in neighbour countries (e.g. Holland, MENTING 1972) the status of the foreign language (including its distribution, its demographic clustering and its use in industry, science and technology), and the relative position of the foreign languages in relation to the native language (see a.o. MACKAY 1972). For the distribution of this information one can make use of general channels (such as press, television, radio) or more appropriate educational channels (e.g. pedagogical centra, professional organizations of teachers, organizations of parents).

4.2. *For foreign language teaching and learning*

a) Inasmuch as we agree to give one foreign language a central place in the basic curriculum, the learner should be repaid with as high an educational interest as possible. The learner can make the most of it if he deliberately and purposefully invests from his own resources : motivation, perseverance, time. We feel quite optimistic about the evokative power of EFL and the English. The utmost task of the teacher 'only' consists in preventing this fire from extinguishing. Perhaps the conditio sine qua non is to keep his own fire burning...
b) Given the opportunities for instrumentally motivating his pupils, he should graft his teaching on 'des Lebens goldnen Baum'. Very often the teacher adopts too simplistic notions of the standard foreign language and its use in the foreign country (see also FISHMAN & LOVAS 1970). Sometimes he is not empathic enough to share with his pupils the need to use the foreign language and/or he is insufficiently psychopedagogically alert to create a suitable methodological framework for releasing this need. Besides, in many cases this instrumental motivation is fairly well balanced with a not to be neglected integrative motivation and a favourable attitude toward the foreign language and the native language speakers. The potential willingness to identify with the foreign language speakers creates a fertile soil for educationally valuable foreign language teaching. It does not end with the practical knowledge of (aspects of) the target language, but uses the target language as a means for the formation in the learner of more general, more human cognitive and affective

behaviour [1]. In the latter context the insight in social-psychological factors such as community-wide auto- and heterostereotypes can be applied to advantage (KELLER 1968, 1969).

c) When teaching EFL, as well as any other foreign language, the teacher must be aware that he processes a new 'subroutine' to the system 'learner' If it is to be retrieved efficiently, it should be embedded in the total system, and not only stored as another code in a part of it (in memory) (SPOELDERS & VAN BESIEN 1974). Only if this happens, will the capacity of the whole system be enlarged and enriched in a significant and unique way.

1. LEINO (1975) remarks that differences may show up between teacher and learner concerning the importance of specific (e.g. courage to speak) and general affective aims (e.g. international understanding, empathy).

APPENDIX

Means, standard deviations and test of polarity of 47 scales (English speaker) (N = 107 pupils)

			m	SD	sign.	t	rank
beschaafd	onbeschaafd		6.1121	1.5377	x x	14.21	10
elegant	lomp	E	5.8878	1.3481	x x	14.48	9
onbetrouwbaar	*betrouwbaar*	E	5.7103	1.5480	x x	11.43	17
handig	onhandig	E	5.7570	1.6474	x x	11.03	19
groot	klein		2.6262	1.7511	x x	3.70	39
godsdienstig	ongodsdienstig		4.6168	1.8462	x x	3.45	40
prettig	onprettig	E	5.5794	1.6197	x x	10.09	24
atletisch	niet atletisch		4.4486	1.8390	x	2.52	43
fatsoenlijk	onfatsoenlijk	E	5.9626	1.5896	x x	12.77	15
trouw	ontrouw	E	5.7570	1.4198	x x	12.80	14
donker	*licht*		4.4112	1.9130	x	2.22	44
gevoelig	ongevoelig	E	5.4206	1.5784	x x	9.31	29
moedig	laf	E	5.5140	1.5803	x x	9.91	26
gezond	ziekelijk		6.1028	1.2434	x x	17.49	1
bescheiden	onbescheiden	E	4.5607	1.8438	x x	3.14	41
arm	*rijk*		4.9439	1.5591	x x	6.26	34
onvriendelijk	*vriendelijk*	E	6.1495	1.3089	x x	16.99	2
goed	slecht	E	6.0561	1.3656	x x	15.57	5
beleefd	onbeleefd	E	6.1121	1.4751	x x	14.81	8
verstandig	onverstandig	E	6.0374	1.2584	x x	16.75	3
lui	*ijverig*	E	5.8224	1.4654	x x	12.86	13
sterk	zwak		4.7196	1.6007	x x	4.65	37
lief	wreed	E	5.9252	1.2416	x x	16.04	4
droevig	gelukkig		2.4860	1.6447	x x	-9.52	27
zelfzeker	besluiteloos		5.7290	1.5454	x x	11.57	17
haatdragend	*vergevingsgezind*	E	5.3551	1.6498	x x	8.50	30
nederig	hovaardig	E	4.1215	1.4903	–	.84	46
mooi	lelijk	E	5.4393	1.3610	x x	10.94	20
sympathiek	onsympathiek	E	6.0748	1.3988	x x	15.34	7
aangenaam	onaangenaam	E	6.0841	1.3881	x x	15.53	6
praatziek	*zwijgzaam*		3.1682	1.6396	x x	-5.25	36
onbaatzuchtig	zelfzuchtig	E	4.1028	1.7153	–	.62	47
flegmatiek	opgewonden		3.6822	1.8510	–	-1.77	45
kalm	rusteloos		5.1402	2.0141	x x	5.77	35
modern	traditioneel		5.7944	1.4191	x x	13.08	12
gierig	*vrijgevig*	E	5.0000	1.6019	x x	6.46	33
actief	passief	E	5.5889	1.4791	x x	11.11	18
boeiend	saai	E	5.5421	1.5976	x x	9.98	25
muzikaal	onmuzikaal		5.1682	1.7183	x x	7.03	31
onbehulpzaam	*behulpzaam*	E	5.4860	1.6389	x x	9.38	28
spontaan	terughoudend		5.0467	1.6619	x x	6.51	32
avontuurlijk	niet avontuurlijk		5.8411	1.3539	x x	14.07	11
nauwkeurig	onnauwkeurig	E	5.7477	1.6603	x x	10.88	21
onverdraagzaam	*verdraagzaam*	E	5.6075	1.5767	x x	10.55	22
ernstig	*grappig*	E	3.2243	2.1470	x x	-3.74	38
proper	vuil	E	5.6916	1.6621	x x	10.53	23
verwant	niet verwant		4.4860	1.9588	x	2.57	42

x x : $p < .01$ x : $p < .05$ E : evaluative scales
The adjective which corresponds to the 7th place is italicized.

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ABSTRACT

A pilot educational experiment concerning the teaching of English as a second foreign language was conducted at the Educational Laboratory of Gent State University (Belgium). The laboratory setting proved to offer a rewarding opportunity for the study of some fundamental issues in the psychology and didactics of foreign language learning and teaching. The Ss were Flemish-Netherlandic speaking youngsters who took English as a second foreign language in the curriculum. The feelings of satisfaction with the outcome of this teaching-learning process at the elementary level were overshadowed by the lack of an adequate articulation between the laboratory teaching-learning experience and the national policy in the field of (foreign) language education. To a certain extent this was expected, but it nevertheless happened to focus the attention more specifically to the latter. In order to gain insight in some underlying sociolinguistic factors to the overall national policy in matters of foreign-language education, an exploratory field study was conducted. Its line of thought and its methodology ran parallel to the concepts and instrumentalizations developed in well-known Canadian studies which aimed at the elucidation of relevant extra-linguistic, affective factors. Among these were, besides (ethno-)stereotypes, the motivations and attitudes towards the study of foreign languages, the foreign language and its speakers. Samples from three populations were taken, including parents, teachers and pupils. All three groups were the direct participants in the decision process labeled 'Which foreign language in the first year of secondary education ?'

The discussion pivoted on the relation between the findings of the field study and the statistics concerning the actual numbers of foreign-language

enrolment. Finally it was tried to suggest to the persons involved a scientifically adjusted and objective framework to help them in decisions of foreign language choice.

RÉSUMÉ

L'anglais langue étrangère dans l'école élémentaire en Belgique. Quelques remarques en vue d'une expérience flamande.

Une expérience pilote en matière d'éducation concernant l'enseignement de l'anglais en tant que langue étrangère a été menée au Laboratoire d'Éducation de l'Université de Gent (Belgique). La situation de laboratoire était une occasion favorable à l'étude des questions fondamentales psychologiques et didactiques de l'apprentissage et de l'enseignement des langues. Les Ss étaient des jeunes néerlandophones apprenant l'anglais comme seconde langue étrangère. Les sentiments de satisfaction concernant les résultats de ces processus d'apprentissage et d'einseignement au niveau élémentaire étaient ombrayés par l'absence de corrélation entre l'expérience de laboratoire et les objectifs nationaux en matière d'éducation de langues étrangères. Ceci était à prévoir jusqu' un certain point, mais néanmoins a attiré l'attention plus spécifiquement sur les-dits objectifs nationaux. Une étude sur le terrain a été menée à fin d'explorer quelques facteurs socio-linguistiques de l'éducation de langues étrangères. L'idée générale et la méthodologie de cette étude se sont déroulées parallellement aux concepts et aux oprationalisations développés dans des études canadiennes ayant trait aux facteurs affectifs. Parmi ces facteurs ont été étudié les (ethno-)stéréotypes, les motivations et les attitudes envers l'étude de langues étrangères, les langues étrangères et ceux qui s'en servent. Des échantillons ont été pris parmi trois populations comprenant des parents, des enseignants et des élèves. Les trois groups participaient directement au processus de décision intitulée « Quelle langue étrangère faut-il choisir au première année des études secondaires ? »

La discussion était axée sur la relation entre les résultats de l'étude explorative et les statistiqunes concernant le nombre actuel d'inscrits pour les langues étrangères. Finalement on a essayé de suggérer aux personnes concernées une proposition scientifique et objective à fin de les aider dans ce choix.

MARC SPOELDERS was born in Antwerp on March 14, 1947. He studied at the Free Teacher Training College of Antwerp where he specialized in modern languages (1966). He took the degree of licentiate/aggr. in psychological and educational science (1970) and of doctor in psychological and educational science (1975) at Gent State University.

Since 1970 he has been attached to the Seminar and Laboratory for Experimental, Psychological and Social Education of Gent State University, first as an applicant, at present as research fellow (aangesteld navorser) of the Belgian National Foundation for Scientific Research (NFWO). His main publications are in the field of language acquisition and language learning.

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* Readers are invited to send information on pedagogical research to the address mentioned below / Les lecteurs sont priés de bien vouloir communiquer leurs projets de recherches etc. à l'adresse suivante / Bitte senden Sie Information über experimentalpädagogische Forschungen an die folgende Anschrift :
Centre for Experimental and Educational Research
Henri Dunantlaan 1
B-900 GENT (Belgium)

410. GREAT BRITAIN — GRANDE BRETAGNE

— Dr *Louis Cohen,* senior lecturer in the social psychology of education at Bradford University, has been appointed to a chair in education in the department of education at Loughborough University.

— Ms *Margaret Constable,* director of courses at the Advisory Centre for Education, is to be research/action officer with the National Educational Research and Development Trust.

— Mr *J. C. Dancy,* principal of St. Luke's College, Exeter, has been appointed to a chair of education which has been approved for establishment in 1978 within the School of Education, Exeter University.

— Mr. *James McCutcheon,* senior assistant and education officer to Norfolk County Council, is to be the first full-time secretary of the East Anglian Advisory Council for Further Education.

— Professor *Peter Joseph Mittler,* at present professor for the education of the mentally handicapped and director of the Hester Adrian Research Centre at Manchester University, has been appointed to a recently established chair of special education at the University.

— Prof. *Philip Taylor* has been elected dean of the new faculty of education at Birmingham University. He was professor of education at the University's school of education, which has now been upgraded to full faculty status.

— Following an ILEA pilot scheme, the first institution to offer the Drama Board's new diploma in Drama in Education was Havering Technical College in 1975. The diploma is an advanced two-year part-time course for experienced drama teachers in infant, junior and secondary education, and advisory staffs.

The setting up of this course involved negotiations between the college and the drama board and, most important, the region's drama advisers, who have played a crucial role in assisting the course tutor in its development. The course involves attendance two nights each week, when aspects of teaching creative drama are dealt with at a theoretical and practical level ; this is followed by the course tutor working with the teachers in their schools. The fact that it is based in a technical college has offered opportunities for the students to teach adults and the 16 to 19 age range who are attending courses at the college.

The diploma is equivalent to a one-year period of secondment.

A group of teachers working together over two years opens up exciting horizons. The certificate course opens up possibilities for using creative

drama, and the diploma course clarifies the thinking behind these ideas', says *Dave Groom,* a member of Barking's drama advisory team. This seems to be the essential difference between the certificate and diploma levels, and indicates the different nature of the expertise obtained.

Carol Davis, also in Barking's team, explains the advanced nature of the course in these terms : 'The diploma course has enabled me to see and understand my teaching in a much wider context.'

The course should not be seen purely as building on existing classroom skills. Opportunities are available to extend expertise with different age groups. 'Working with children in a nursery school has thrown light not only on the principles of drama in education, but also on the principles of education as a whole', *Paul Kaiserman,* from the Redbridge drama team, says.

The qualifications offered by the Drama Board appeal to a wide range of teachers, not purely the drama specialist, as they have at their core a concern for innovation in education.

(*The Times Educational Supplement,* no. 3233 (May, 1977), p. 27).

— A new maths degree to help meet the shortage of qualified maths teachers is to start at Manchester University in October. It will be a three-year BSc course and entrants will normally be required to have a good pass in A level maths and two other subjects. The normal minimum requirements will be C, C, D. In the first year students will consider current eduational controversies and a range of disciplinary options.

— Open University students aged between 18 and 20 have a lower success rate in their first year than their older counterparts, an investigation by the university's survey research department has revealed.

But the latest findings, outlined in an initial report published by the OU yesterday, also show that younger students who survive their first year of distance teaching perform as well in the second and third years of an OU course as older students.

The report gives the preliminary results of a five-year research programme funded by the Department of Education and Science aimed at determining the suitability of the OU for younger students. It includes the findings of a pilot scheme for admitting students between 18 and 20 to the university between 1974 and last year.

A total of 1,350 students in this category registered provisionally with the OU during this time. But only 60 per cent compared with 75 per cent of older students finally registered after three months of study, the report says.

It adds : 'Of the younger students who did proceed to final registration about 38 per cent failed to obtain a course credit at the end of the year. This figure includes students who either failed academically, withdrew, did not

fulfil their summer school requirements or failed to turn up for the examination.'

They fared much worse than students aged over 21 where the 'failure rate' was only 20 per cent. But OU students in the older age ranges did equally badly as those who were under 21.

The report says that 94 per cent of the new younger students who gained a credit in 1975 continued on to a second year of study, a similar percentage to other students. It maintains : 'Once they have successfully cleared the first year barrier the younger students seem to continue with their studies at the same rate as older students. Those who do continue attempt as many credits as older students and gain them at the same rate.'

The pilot scheme was introduced after a Government request in 1970 for the OU to evaluate its contribution to the development of future higher education provision. The university agreed to admit 500 younger students in each of the three years from 1974 to 1976 of whom 30 per cent had two A levels and the other 70 per cent less than the minimum degree course entry requirements.

'As one might have expected the qualified group made better progress than the unqualified. Of the 1974 intake of finally registered younger students, 63 per cent of the qualified group were still studying in 1976 compared with only 43 per cent of the unqualified group', the report maintains.

Younger female students continued studying longer than their male counterparts, says the research team. Of the 1974 intake, 59 per cent of the women were still studying with the OU in 1976 compared with 41 per cent of the men. When sex and qualifications were considered together qualified women emerged as the most successful group and unqualified men the least successful.

The occupational breakdown of the students involved in the pilot study was markedly different from older students. Almost a third of the younger group were clerical and office workers, 20 per cent more than the proportion among older students. Technical personnel formed the second highest group of younger students, constituting about 10 per cent in each of the three years.

Women outnumbered men in the first intake of younger students when 17 per cent were housewives but this proportion declined in the final two years. However the 1976 intake included 48 per cent women, compared with 42 per cent among the university's older students.

(*The Times Higher Education Supplement*, no. 275 (Jan. 1977), p. 3).

— Prof. *L. Boucher*, Dean of Professional Studies of Chester College, Chester, informed us on two doctoral dissertations relating to experimental research in education :

– *Bryan, K. A.*, 'A sociological description of English Middle Schools, with particular reference to four local education authorities' (supervisor : Prof.

W. A. L. Blyth). This research focuses on the reasons why four English local education authorities adopted Middle Schools in their comprehensive reorganisation of secundary education, and examines intended and unintended consequences of these decisions

– *Alston, Pb.*, 'An exploratory study of the cognitive aspects of musical proficiency' (supervisor : Prof. *E. Stong*). An analysis of the conceptual elements of musical proficiency and an attempt to study these as exhibited by listeners, performers and composers.

— At the University of Leeds, the following doctoral dissertations are in progress :

– *A. Orton :* 'A cross-sectional study of the understanding of elementary calculus in adolescents and young adults' (tutor : Prof. *K. Lovell*) ;

– *E. L. Friedman :* 'Self control procedures in the classroom involving teacher, parent and pupil : an investigation into their role in reducing delinquent behaviour' (tutors : Dr. *U. T. Place* and Dr. *H. Francis*) ;

– *M. D. McGinley :* 'The family environment of autistic children : an experimental study of teaching basic skills' (tutor : Prof. *M. B. Sutherland*) ;

– *P. J. McGinley :* 'The use and evaluation of a computer programming language in teaching mathematics to schoolchildren' (tutor : Mr. *J. R. Hartley*) ;

– *A. M. Morris :* 'A study of some personality factors in relation to computer – based learning' (tutor : Mr. *J. R. Hartley*) ;

– *J. C. Conder :* 'A psychological study of cognitive and affective elements in infant school religious education' (tutor : Dr. *H. Francis*) ;

– *A. J. Goodwin :* 'An evaluative study of integrated science teaching in secondary schools' (tutors : Mr. *J. R. Hartley* and Dr. *R. Driver*) ;

– *T. J. Mark :* 'A study of cognitive and affective elements in the religious developments of adolescence' (tutors : Prof. *M. B. Sutherland* and Mr. *J. R. Hartley*) ;

– *K. Tait :* 'A computer based study of mathematical sentence learning by children' (tutors : Mr. *J. R. Hartley* and Prof. *K. Lovell*) ;

– *J. Wellington :* 'A study of the emergence of some aspects of logical thinking, in selected groups of pre-adolescents, adolescents and young adults' (tutor : Prof. *K. Lovell*) ;

– *K. M. Woolly :* 'The growth of some biological concepts in "A" level candidates' (tutors : Prof. *K. Lovell* and Dr. *M .S. Gosden*).

— At the Division of Education, University of Sheffield, the following doctoral dissertations are in progress :

– *C. Fox :* 'A study of verbal and non-verbal communication in relation to

the teaching of Physical Education with particular reference to the initial training of teachers' (Supervisor : Prof. Dr. *P. K. Poppleton*) ;
– *D. Loxley :* 'Factors affecting the development of an education based psychological service' (Supervisor : Prof. Dr. *P. K. Poppleton*) ;
– ***T. Johnston :*** 'An investigation into the attitude change and development of student teachers during their three year training course at Colleges of Education' (Supervisor : Dr. *P. K. Poppleton*) ;
– *R. Winter :* 'An evaluation of the efficacy of the language laboratory in the teaching of German to 11 and 12 year old beginners in mixed ability classes' (Supervisor : Mr. *W. Rowlinson*).

This information was given by Prof. *J. P. C. Roach,* Head of Division of Education.

— Prof. *M. Chazan,* Department of Education, University College of Swansea, Wales, sent us information on a new research project on the early education of handicapped children. This inquiry, sponsored by the Department of Education and Science, aims at highlighting the educational needs of four-year-old handicapped children in the context of their physical, intellectual, emotional, and social development. Screening of the child population in the age-range selected (date of birth between 1 July and 31 December, 1972) has been carried out in two local authority areas (one in Wales, one in England) and a study in depth will be made of approximately 100 handicapped children during 1977.

— The United Kingdom Reading Association has started a new journal, 'Reading Education-UK'. The first issue is entirely devoted to articles on the influence of the Bullock Report on teacher training, in relation to preparation for the teaching of reading. Information may be obtained from *S. V. Heatlie,* 63 Laurel Grove, Sunderland, SR2 9EE.

— The 'Educational Review' published a special issue on 'Behaviour Problems in Schools'. It contains articles on disruptive and violent pupils, on the relationship of personality and behaviour to school exclusion, the child's perception of the school, the effects of disruptive behaviour of teachers, on teachers' perceptions and problem pupils, on behaviour problems in secondary schools and in comprehensive schools.

(*Educational Review,* Vol. 29, No. 3 (1977)).

417. IRELAND — IRLANDE

— From Prof. Dr. *V. A. McClelland,* Department of Education, University College, Cork, we received the following list of doctoral dissertations in progress, all of which are being conducted under his supervision.

– *Barry, M.*, 'The problem of maladjustment as delineated in recent fiction and autobiography and conflicts in view concerning maladjustment' ;
– *Barry, D.*, 'The place of indigenous languages in the former British territories of East and West-Africa' ;
– *Duffy, H.*, 'Liberal education – its formative effect and implications for educational development and practice today' ;
– *Johnston, R. J.*, 'Phantasy and education' ;
– *Moran, M.*, 'Moral education' ;
– *Riordan, S.*, 'The Irish community school : a sociological investigation'.

The following doctoral dissertation has been completed under the supervision of Prof. Dr. *V. A. McClelland : Hederman, M. P.*, 'Phenomenology and education. The phenomenological revolution in its application to educational theory and practice with special reference to the pedagogical encounter as described by Martin Buber'.

430.1. GERMAN FED. REP. — RÉP. FÉD. ALLEMANDE

— La Deuxième Conférence internationale sur l'amélioration de l'enseignement à l'université (Improving University Teaching) s'est tenue à Heidelberg en juillet 1976, sous l'égide de l'Université du Maryland et en coopération avec l'Université de Heidelberg.

Quelque 130 éducateurs et administrateurs, en provenance de vingt-trois pays, ont discuté d'un ensemble de problèmes relatifs à l'enseignement universitaire dans les domaines suivants : aide à l'apprentissage des connaissances pour les étudiants ; technologie éducative ; amélioration du rendement des enseignants ; évaluation de l'efficacité de l'enseignement.

— The newest University in the Federal Republic of Germany, located at Passau, East Bavaria, will admit its first 500 students in 1978-79.

The new University continues the tradition of the old-established College of Theology which has had university status since 1773. The University will specialize in vocationally-oriented courses, many of which will be interdisciplinary : economics combined with modern languages, and technology-based economics. Linguistics will be one field of excellence at the University, which will also offer courses in theology, political science and history, whereas the natural sciences will not be represented at all.

— La première pierre d'un bâtiment central destiné à abriter l'Université d'enseignement par correspondance de Hagen a été posée.

L'Université de Hagen, entrée en service en octobre 1975, ne disposait jusqu'à présent que de locaux loués dans différents quartiers de la ville.

L'enseignement à l'Université de Hagen, actuellement limité aux mathématiques, aux sciences économiques et aux sciences pédagogiques, sera étendu dans un proche avenir au droit. Il est également question d'inclure dans les programmes des enseignements en physique, en biologie et en chimie.

Le matériel d'études, envoyé par poste, est constitué de textes ronéotypés et d'instruments éducatifs, tels que films, diapositives, enregistrements vidéo, etc... adaptés à l'enseignement par correspondance.

Les études à l'Université de Hagen revêtent trois formes différentes :
– les études à plein temps pour les étudiants sans profession (niveau minimum : « Abitur ») ;
– les études à mi-temps pour les étudiants exerçant une activité professionnelle (niveau minimum : « Abitur ») ;
– les études spécifiques, pour lesquelles aucune qualification n'est exigée.

L'Université d'enseignement par correspondance de Hagen dispose actuellement de 18 chaires et emploie 230 collaborateurs, dont 60 scientifiques. Un an après son entrée en service, l'Université de Hagen occupe déjà une place importante parmi les universités de la République fédérale d'Allemagne. Le premier bilan est encourageant : le nombre des immatriculations pour l'année universitaire 1975/76 (1.390 étudiants de 23 pays à la « Hagener Alma Mater ») en est la preuve. Quant au pourcentage des étudiants étrangers, il est de 4 %. Un quart des étudiants est du sexe féminin ; environ 80 % des étudiants immatriculés à Hagen ont plus de 25 ans et plus de 70 % ont déjà acquis une formation professionnelle.

Le Ministre-président du « Land » de Rhénanie du Nord-Westphalie, M. *Heinz Kühn*, a souligné que l'Université de Hagen était un symbole de l'égalité des chances. « L'envoi à domicile du matériel d'études permet à l'Université de Hagen d'atteindre tous ceux qui ne peuvent assister aux cours donnés dans les universités de type traditionnel : les handicapés physiques, les femmes au foyer tenues de renoncer à leurs études pour assurer les travaux ménagers et l'éducation de leurs enfants, les personnes exerçant une profession dans une ville sans université et, finalement, les personnes âgées qui ont, elles aussi, le droit de parfaire leurs connaissances. »

(*Bulletin de l'Association Internationale des Universités*, Vol. XXX, No. 1 (1977), p. 33).

— Heft 12 (Dezember 1976) von „Pädagogische Beiträge" ist ein Sonderheft über Disziplin im Unterricht.

Der Beitrag von *Hans Rauschenberger* bringt zunächst einige Zitate zum Disziplinbegriff aus pädagogischen Lexika der letzten hundert Jahre und untersucht die Bedeutungsverschiebung, die diese Frage erfahren hat. Von da aus wird gezeigt, wie in diesem Bereich theoretische Rudimente sich in Begriffen niederschlagen und ebensowohl das Urteil des Lehrers wie auch sein Handeln

bestimmen. Heute gilt der Disziplinbegriff als überholt ; aber der Begriff der Verhaltensstörung, der an die Stelle dessen der Disziplinschwierigkeit getreten ist, reicht zur Charakterisierung des Problems nicht aus. Der Autor stellt fest, daß es uns an einem treffenden Ausdruck für dieses Problem mangelt und daß sich hinter diesem Defizit die unaufgearbeitete Frage nach dem Zusammenhang von Erziehung und Unterricht verbirgt.

Ariane Garlichs geht in ihrem Beitrag davon aus, daß Unterrichtsstörungen beim Lehrer häufig zu der Angst führen, derartigen Situationen nicht gewachsen zu sein. Diese Angst lähmt das Handeln und führt zu Abwehrreaktionen, die das Problem nur verschärfen. Die Autorin analysiert einige Unterrichtssituationen, in denen Störungen auftraten. Der Schlüssel zu möglichen Lösungen liegt nicht im voreiligen Reagieren darauf, sondern im unvoreingenommenen Aufarbeiten der Störungssituation. Aus diesem Grund wird im letzten Teil des Beitrags eine Reihe von Anregungen gegeben, wie man Störungen analysieren kann, um so die geeigneten Anhaltspunkte für sinnvolles pädagogisches Handeln zu gewinnen.

Auch *Erhard Wicke* geht davon aus, „daß es für den Begriff Disziplin keinen vollwertigen terminologischen Ersatz gibt". Indem er auf John Dewey zurückgeht, beschreibt er den Zusammenhang von Disziplin und Interesse. Dort, wo die Sache das Subjekt in ihren Bann schlägt, manifestiert sich ebensowohl Interesse wie Disziplin. Um derartige Lernprozesse zu erkennen und zu unterstützen, muß der Lehrer zugleich erfahren und sensibel sein. Dies führt Wicke auf das Problem, wie der Lehrer seine Rolle so finden kann, daß er den Schülern zu Bildungserfahrungen verhelfen kann, die eine immanente und wohlverstandene Disziplin hervorbringen.

Wolfgang Münzinger unternimmt es, seinen eigenen Unterricht als Lehrer-Anfänger post factum zu schildren und als gescheitert zu interpretieren. Er beschreibt eingangs die tiefe Kluft des Unverständnisses, die sich zwischen Schülern und ihrem engagierten Lehrer auftut, wenn dieser sie auf ihre bereits vorhandenen interessen festlegen will. Er zeigt, wie ein solches Vergehen zwangsläufig zu Folgerungen nicht geringen Ausmaßes führt : Der Lehrer muß den Schülern, die nicht auf ihn eingehen wollten, noch weiter entgegenkommen, indem er schließlich auch die Grenzen des Faches zur Disposition stellt. Er muß ferner mit ihnen Regeln des Umgangs vereinbaren. Dies alles steigert die Anforderungen, die er selbst an seine Unterrichtsvorbereitung stellt und bringt ihn tendenziell in eine schwierige Lage gegenüber dem Kollegium.

Der Beitrag von *Hans Christoph Berg* ist nicht unter dem Aspekt der Disziplinfrage geschrieben worden. Und doch scheint es, daß diese Schilderung einer elften Klasse den Leser mitten in dieses Problem hineinführen kann. Wo der Unterricht zur Routine der Lehrer geworden ist, da wird er – freilich in

anderer Weise – auch zur Routine der Schüler. Disziplinkonflikte treten in akuter Form nicht mehr auf ; es besteht zwischen Lehrern und Schülern nur noch die lässige Konvention des gegenseitig Sich-Tolerierens – Ergebnis des ständig überspielten und schließlich versandeten Erziehungsproblems.

436. AUSTRIA — AUTRICHE

— In preparation for its Third Congress, to be held in Klagenfurt, Austria, in September 1978, the European Association for Research and Development in Higher Education is launching an enquiry into the state of research and development in higher education.

The enquiry will aim at compiling and analysing up-to-date information about research and development activities being carried out by university institutions and individuals. The work is being performed under the direction of the President of the Association, Professor *E. A. van Trotsenburg*, of the University of Educational Sciences, Klagenfurt.

438. POLAND — POLOGNE

— The *'annual conference for British Council-recruited lecturers in Poland'* was held on 12 March 1977 at the British Council offices in Warsaw. There are at present eight lecturers working in Polish universities and plans are afoot to expand the number of posts in view of the considerable interest shown by English departments in having native-speaker lecturers on their staffs.

The majority of papers at the conference dealt with problems encountered in higher education in Poland. Dr. *Leighton Pratt* (University of Cracow) commented on the problem of maintaining standards as a result of the reduction in length of the first degree MA course ; *Rab Shiell* (University of Cracow) discussed the role of postgraduate English language courses for scientists : *Una Maclean* (Technical University of Wroclaw) questioned the value of English courses for undergraduates at Polish technical universities ; *Lidia Kubaczka* (University of Wroclaw) explained difficulties in organising conversation classes ; *John Barry* (University of Poznan) advocated the use of drama in teacher training ; *George Hyde* (University of Lublin) commented on the important role of the foreign lecturer in helping students to become aware of current literary research outside Poland ; *Richard Gravil* (University of Lödz) discussed the comparison of his students with those of *I. A. Richards* in Cambridge in the 1920's as described in 'Practical Criticism' (1929) ; and *David Evans* (University of Warsaw) commented on functional syllabuses and their limitations and gave examples of English-Polish functional contrastive analysis.

The conference gave lecturers the opportunity to compare notes with their colleagues in Polish higher education, for indeed the eight lecturers are involved in six different fields: applied linguistics, methodology, technical English, postgraduate intensive courses, conversation classes, and literature. The recent reduction of the length of the MA course in English from five to four years was a major topic of discussion, as this means that students will be writing the compulsory dissertation (on British literature, American literature, theoretical linguistics, or applied linguistics) with a weaker general background of English studies than previously.

There is certainly no doubt that enormous interest in learning English exists in Poland, whether in educational institutions or privately.

(*IATEFL Newsletter*, No. 48 (June 1977), pp. 46-47).

— Almost 150 teachers of foreign languages and foreign language teaching specialists, including a small number of foreigners, attended the Second General Assembly of the Modern Language Association of Poland, held from September 24-26 1976 at the University of Poznan. In addition to the assembly, a book exhibition took place, where such publishers as Longman, Oxford University Press, and Penguin Books participated as well as Polish ones. Twenty-one papers were delivered at the assembly, including 'Foreign Vocabulary Learning as Problem No. 1 in Language Teaching at the Advanced Level' *(Waldemar Marton)*, 'Les valeurs logiques de la langue française' *(Stanislaw Gniadek)*, and 'Siding with the Learner' *(William R. Lee)*.

The speakers, from various professional backgrounds, represented interests in many areas of the common discipline.

Jacek Fisiak remains chairman of the main board of the MLAP, and *Waldemar Pfeiffer* its general secretary.

(*IATEFL Newsletter*, No. 48 (June 1977), p. 46).

439. HUNGARY — HONGRIE

— Un Séminaire international sur la technologie de l'éducation a été organisé en octobre 1976 à Budapest par le Centre national hongrois pour la technologie de l'éducation, avec l'appui de l'Unesco et du Programme des Nations Unies pour le développement.

Le Séminaire a réuni des spécialistes venant de Bulgarie, de Finlande, de Grèce, de Hongrie, de Pologne, de République démocratique allemande, de Tchécoslovaquie, d'Union soviétique et de Yougoslavie, ainsi que des représentants de l'Unesco, du Bureau international du Travail (BIT) et du Conseil international des moyens d'enseignement.

44. FRANCE

— A l'Université de Caen les thèses de doctorats suivantes sont en progression :

– *H. L. Agbodjan :* « L'attitude des élèves togolais vis-à-vis de l'enseignement du français au niveau du second degré » ; (Recherche d'une corrélation entre l'attitude des élèves togolais vis-à-vis de la langue française et leur rendement scolaire dans cette langue – construction d'une échelle d'attitude) ; directeur : Prof. *G. Mialaret ;*

– *P. A. Diouf :* « Contribution à la méthodologie de l'enseignement intègre » ; (Étude des styles cognitifs priviligiés en milieu sénégalais, à partir de situations simulées et d'exécution de projet) ; directeur : Prof. *J. Vial ;*

– *J. Guglielmi :* « Psychopédagogie de l'histoire. Apprentissage et éducation » ; (Analyse des processus d'éducation et son application à la pédagogie de l'histoire) ; directeur : Prof. *J. Vial ;*

– *A. Guillotte :* « Étude expérimentale de certaines variables liées à la rapidité des acquisitions, au cours des premières approches perspectives de 'textes écrits', par des enfants qui n'ont pas encore appris à lire » ; directeur : Prof. *G. Mialaret ;*

–*A.-R. Jaafar :* « Réaction des éducateurs en Algérie à l'introduction des mathématiques modernes. Conséquences en ce qui concerne leur formation » ; directeur : Prof. *G. Mialaret ;*

– *A.-M. Laborde :* « Formation de formateurs-travailleurs sociaux » ; directeur : Prof. *G. Mialaret ;*

– *D. Lavenu :* « Comportement pédagogique du maître et situation d'apprentissage de la lecture au cours préparatoire » ; directeur : Prof. *G. Mialaret ;*

– *J. Le Gal :* « Esquisse d'une recherche sur la pédagogie de l'ortographe d'usage : savoir écrire nos mots » ; (Analyse des mots qui doivent être appris et recherche d'une méthodologie efficiente vers un apprentissage personnalisé de l'ortographe) ; directeur : Prof. *J. Vial ;*

– *M.-F. et G. Mavroïdis :* « Analyse des conduites ludiques créatrices chez l'enfant de 4-6 ans » ; directeur : Prof. *J. Vial ;*

– *M. Moscato :* « Performance linguistique et activités cognitives : étude sur le raisonnement déductif » ; directeur : Prof. *J. Vial ;*

– *L. Motin :* « La créativité et l'irrationnel » ; directeur Prof. *G. Mialaret ;*

– *Y. Pocztar :* « Étude des fondements psychologiques et philosophiques de l'enseignement programmé. Approche epistémologique » ; directeur : Prof. *G. Mialaret.*

— De la part du Professeur *G. Avanzini,* directeur du laboratoire de Pédagogie Expérimentale de l'Université Lyon II, nous avons reçu une liste de dissertations doctorales en préparation :

– *Pierre Garnier :* Sens et fonction de l'Inspection primaire.
– *Dominique Ginet :* Les grands thèmes de la pensée de Roger Cousinet.
– *André Matrat :* Contribution à une typologie des professeurs de philosophie.
– *Bernard Wagner :* Réflexions sur l'enseignement de l'Histoire.
– *Michel Bernard :* Les modèles de formation des adultes.
– *Jean-Marie Besse :* Les grands thèmes de la pensée de Decroly.
– *Marc Broch :* Les foyers socio-éducatifs.
– *Michel Carew :* Les facteurs de réussite dans l'apprentissage de l'anglais.
– *René Garassino :* Contribution à l'élaboration d'une problématique scientifique des activités physiques et sportives.
– *Marie de Maistre :* Étude expérimentale de l'aptitude à la lecture.
– *Cathérine Mordacq :* Modalités de formation et techniques d'évaluation dans les écoles d'infirmières.
– *Gaston Paravy :* Les méthodes d'éducation de la J.A.C.
– *Louis Pilorge :* Les facteurs du changement de la didactique de la langue anglaise.
– *Ernst Rebben :* Contribution à l'étude de la didactique de la langue allemande.
– *Hélène Rebben :* Contribution à l'étude de l'apprentissage du langage oral et écrit chez les enfants de 5 à 7 ans.
– *Jacques Caillot :* L'avenir de la pédagogie Freinet.
– *Charles Delorme :* « L'animation » comme stratégie du changement de l'École.
– *Gérard Gautron :* Formation et adaptation professionnelle des adultes.
– *J. D. Groleau :* Étude comparative de la méthode de l'enseignement de la mathématique au Canada et en France.
– *Jean Guion :* Contribution à l'étude de l'apprentissage de la lecture.
– *Françoise Hortala :* Réflexions sur le « phénomène-école » dans la formation des infirmières.
– *Gilles Laprevote :* Problèmes de la formation des maîtres de l'école élémentaire.
– *Tran van Canh :* Réflexion sur les obstacles rencontrés par la recherche pédagogique en France depuis Alfred Binet.
– *Monique Abadie :* Facteurs d'évolution de la catéchèse de l'enfance, en France, de 1880 à 1970.
– *Pierre Arnaud :* Contribution à l'étude de l'éducation motrice chez des élèves du 1er cycle du second degré.
– *Marguerite Bonjils :* Les relations des adolescents avec leurs parents et avec d'autres adultes.
– *René Chabrier :* Sens et fonctions de l'enseignement primaire supérieur.
– *Geneviève Charles :* L'infirmière... demain. Contribution à une réflexion sur la finalité de la profession.

– *Félix Dahan :* L'apprentissage du français comme l'un des facteurs de démocratisation (niveau maternel et élémentaire).
– *Joseph Dikunduakila :* La croissance démographique et les besoins en éducation au Zaïre.
– *Guy Dutey :* Dans quelle mesure l'appartenance à une double civilisation imprime-t-elle un caractère particulier à l'inadaptation des jeunes maghrébins mineurs de Justice.
– *Joseph Marechal :* La théorie de l'éducation chez les utopistes.
– *Justin Minani :* Le système scolaire suédois.
– *Marie Odile Morel :* Place de l'enseignement par correspondance dans la formation des adultes.
– *Etienne Petit :* Réflexion sur les centres de documentation d'établissements.
– *Lucien Piloz :* La formation des professeurs de CET dans les ENNA.
– *Jean-François Saffange :* Contribution à l'étude de la pensée pédagogique de Neill.
– *Charles Smolski :* Réflexion sur la formation de la maîtrise d'entreprise.
– *Dimitrio Yaglis :* Contribution à l'étude des principes pédagogiques montessoriens, et à leur applicabilité.

Les thèses suivantes ont été soutenues en 1976 :
– *Jack Levy :* L'enseignement des langues dans les écoles d'ingénieurs.
– *Michel Marcon :* Finalités et fonctions de l'enseignement technique.
– *André Montesinos :* Étude de la contribution de l'organisation du travail à la formation des infirmières.

— Sous la direction du Prof. *G. Snyders,* Université de Paris V, Mr. *Mohamed Ben Fatma* (Tunisie) a terminé une dissertation doctorale sur « Le comportement des enfants de Bourguiba dans la société et l'éducation qu'ils reçoivent ».

— Sous la direction du Prof. *Carmel Camilleri,* Sorbonne, Paris V, Mr. *Abdelhamid Helali* prépare une thèse de doctorat sur « La perception du maître par ses élèves et la représentation de cette perception par le maître ».

480. FINLAND — FINLANDE

— The creation of regional 'open universities', each based at one of the eight existing multi-faculty full universities, is being considered by the Government following recommendations by the Finnish Cultural Foundation.

The report, by a committee including university, adult education and Finnish Broadcasting Company representatives, favours developing existing facilities rather than creating a new institution like Britain's Open University, which it was felt would be too expensive.

The eight new open university departments would form the nucleus of regional units covering the country, including other single-faculty universities, 86 folk high schools – which offer residential adult tuition – 265 adult education institutes providing mainly evening courses and 21 university-level summer courses.

A national commission would act as coordinator for the eight units and maintain links with overseas open universities.

Courses and teaching would be supervised by the eight departments and their branches at adult institutes and folk high schools. The universities would also adopt curricula, choose tuition methods and materials and approve non-university tutors.

Tuition would be initially mainly direct, relying almost exclusively on university teachers, who would take on the extra instruction load as overtime. Later, however, private study through correspondence courses, national radio and television and regional radio would dominate.

Students would study mainly at home, attending intensive or evening courses offered by their nearest university or college. They would also be expected to undertake laboratory or other research work at the summer universities, which currently offer tuition to about 40,000 over-16s regardless of their educational background.

The report, which lays most emphasis on developing adult rather than simply higher education, favours a gradual development of open university-style teaching. The main target should be workers and housewives over 25 who missed earlier chances to undertake full-time university studies – especially for geographical reasons or lack of formal qualifications – and need training or re-training in connection with work.

Courses would be based on a credit point system and students should be able to study for a new intermediate qualification as well as traditional full-length degrees.

(*The Times Higher Education Supplement,* no. 275 (Jan. 1977), p. 13.)

— Under the supervision of Emeritus Professor *Matti Koskenniemi,* Institute of Education, University of Helsinki, the following doctoral dissertations are in progress :

– *K. Unsikylä :* 'Joint planning as a part of the instructional process' ;
– *M. Martikainen :* 'Participation of pupils in the verbal interaction during the instructional process' ;
– *K. Karma :* 'Estimating the basic structure of instructional situation with the DPA classification system'.

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485. SWEDEN — SUEDE

— 'System', a journal for educational technology and language systems, edited by Prof. *N. F. Davies*, Department of Language and Literature, University of Linköping, devoted a special issue on individualized instruction with Prof. *H. B. Altman*, as a guest-editor.

The contributors are American foreign language teachers with extensive experience as practitioners or directors of individualized language programs. The issue also contains a selected bibliography on the topic.

(*System*, Vol. 5, No. 2 (May, 1977)).

493. BELGIUM — BELGIQUE

— Un événement professionnel important pour tous les pédagogues et enseignants d'Europe prendra place en 1978. C'est en effet, du 10 au 14 avril 1978 que se déroulera dans le Parc des Expositions (Palais du Centenaire) de Bruxelles, le 16e Salon européen du Matériel didactique DIDACTA-EURODIDAC.

Cette exposition internationale qui groupera une sélection exceptionnelle de la production la plus récente de l'industrie mondiale du matériel d'éducation, sera complétée par un programme de journées d'études consacrées à des sujets de grande actualité pédagogique.

Dès ce jour, les organisateurs prévoient la présentation de matériels d'éducation produits dans plus de 25 pays et estiment que le 16e Salon DIDACTA-EURODIDAC figurera parmi les plus grandes expositions professionnelles jamais consacrées à l'information des milieux pédagogiques et d'enseignement d'Europe.

— At the university of Leuven the following doctoral dissertations finished :
– *Agnes De Munter :* „De functie van modellen in de empirisch-pedagogische onderzoekscyclus" (The function of models in the empirical-pedagogical research cycle) ; director : Prof. Dr. *N. Huygelier ;*
– *An Hermans :* „De onderwijzersopleiding in België, 1842-1884. Een historisch-pedagogisch onderzoek naar het gevoerde beleid en de pedagogisch-didactische vormgeving" (The training of elementary school teachers in Belgium, 1842-1884. A historic-pedagogical research into the policy and the pedagogical-didactical design) ; director : Prof. Dr. *M. De Vroede.*

494. SUISSE — SWITZERLAND

— Unter der Leitung von Prof. *H. Aebli*, Universität Bern, Abteilung Pädagogische Psychologie, promovierte *Helmut Messner* mit einer Dissertation über

„Struktureller Transfer und Unterricht – Eine psychologische und didaktische Analyse des Anwendungsbegriffs" (Structural transfer in teaching – a psychological analysis of the application concept).

— L'Institut Romand de Recherches et de Documentation Pédagogiques (IRPD) nous a fait parvenir son « Rapport d'Activité 1976 ».

Le rapport contient des informations nombreuses sur l'organisation de l'Institut, sur son service de la recherche, le service de la documentation et celui des moyens d'enseignement.

497.2. BULGARIA — BULGARIE

— Prof. *Piryov* let us know that a branch of the university of Sofia was established in Blagoevgrad for the training of kindergarten teachers and primary school teachers on four years university level. Until last year these teachers were prepared in teachers' institutes of 2 and 3 years study.

— The first university-level institute for kindergarten and primary school teachers was opened in 1976 in Blagoevgrad, South-West Bulgaria.

About 200 students from all over the country have already enrolled and some will be trained as kindergarten music teachers. Those wishing to become primary school teachers will specialize after their second year in pictorial art, physical education, Russian language and labour training. The Institute plans to train 1200 regular and 600 students by correspondence over the next four years. A university campus is to be built in Blagoevgrad, with new academic buildings and hostels, a model kindergarten and nursery and physical education facilities.

The Institute is to become a centre for multilateral educational and scholarly research. Its university-level teaching conforms with the country's programme for improvement in the field of higher education. Bulgaria had 5 higher education establishments in 1940 as against 28 at present (with 68 faculties), the number of undergraduates has risen from 10,169 in 1940 to 126,055, and the number of teaching staff is now 11,248.

(*Bulletin of the International Association of Universities*, Vol. XXX, Nr. 1 (1977), p. 34.)

— At Sofia University *Elka Kutova Petrova* took her doctoral degree in education with a dissertation on 'The play and the moral formation of child's personality', which was published in 1975 by Narodna Prosveta. Also *Alexander Madgarov* took his doctoral degree with a thesis on 'The state and dynamics of mathematical knowledge of 7-year children', published by Narodna Prosveta in 1976. This information was given by Prof. *G. D. Piryov*.

498. ROUMANIE — RUMANIA

— Mme *Ion Drăgan* de l'Université de Timisoara a terminé sa thèse de doctorat sous le titre « Interesul cognitivv si orientarea professionala » (L'intérêt cognitif et l'orientation professionnelle) sous la direction du Prof. Dr. *N. Parvu*. La thèse a été publiée chez Didactica si Pedagogica – Bucaresti en 1975.

569.4. ISRAEL — ISRAEL

—The story of the founding of Israel's 'open university', which started its first courses last term, illustrates many of those qualities most characteristic of the country's higher education – boundless energy for the creation of new institutions, generous private donations, and the intention to provide for the disadvantaged without losing academic standing.

But Tel Aviv's Everyman's University has also provided a story of high ambition trimmed by the realities of money and government finance, the mismatch between private provision and government responsibility and the power of the traditional keepers of the academic conscience in the universities.

For all that, the Everyman's University seems to have been a success story. Last year over five students applied for every place on its courses and it seems in the broad field of higher education its experiments with educational technology and new teaching methods could give a much-needed stimulus.

The idea of an open university stemmed eight years ago from two separate sources, one public one private. In the public sphere, Sir *Harold Wilson*, who is a popular figure in Israel, must be given some credit. For in 1969 Mr *Yigal Allon* became Minister of Education and Culture and there is no doubt that he, a personal friend of Sir Harold, was impressed by the British Open University which was just opening with Sir Harold's blessing.

Meanwhile, an independent initiative had been taken by the Rothschild Foundation without the government's knowledge. The foundation, nicknamed in Israel *Hanadiv* ('the big giver') had done much work in educational technology and the use of television in schools. Its secretary-general, Mr *Max Rowe*, had done a lot of the groundwork for at least considering an 'open learning system' at higher levels.

Typically, the Rothschild Foundation was able to call on a group of international experts to assess Israel's need. It commissioned a report from a group led by Professor *Wilbur Schramm* of Stanford University, a communications specialist, and including Professor *David Hawkridge*, director of the Institute of Educational Technology at Britain's Open University.

The experience of the British OU was a useful background in the early stages in Israel. It was recognized, for example, that sanguine hopes of im-

mediately reaching those who had dropped out of conventional education by means of television and radio were misplaced. A large part of the target population of Israel's open university was always intended to be those who had some education such as primary school teachers or those who needed to be brought up to the level of the matriculation certificate required for entry to the traditional university.

In fact, in the light of the recommendations of Professor *Schramm*'s committee, the Rothschild Foundation decided to go ahead with an 58m investment to carry out under the university's framework three different purposes. The Everyman's University is planned to provide in service teacher education, especially for elementary and intermediate grades ; to give a second chance at a university general degree for disadvantaged groups with a basic curriculum of mathematics, natural science and Jewish studies ; and to provide adult education by means of a range of technical and liberal arts courses.

Meanwhile, the established universities have been actively expanding their pre-academic courses to try to encourage more drop-outs from the secondary system back into education, not venturing, except at Haifa University, into extra-mural work. But it could be that political pressures will encourage them into adult edcation – which does not give the Everyman's University long to prove itself.

The planners of the Everyman's University have never slavishly followed the models of the British OU or the media experiments of West Germany and the United States. For one thing, television itself is not fully developed in Israel. There is only one channel and so not much free time available. Nor has much use been made of the radio. In other words, the Everyman's University has used a different 'media mix', relying on correspondence courses and giving a central position to classes run in existing educational buildings using part-time utors recruited from the universities.

Even so, the Israelis have made full use of foreign-made programmes, especially in science, and begun to make some of their own in archaeology and geology. The Everyman's academic secretary, Mr *Robin Twite*, a Briton seconded from his post as representative of the British Council in Israel, says they have been able to make good use of the educational plant, much of which is not as intensively used as it might be. Much work has gone into producing course material, books and notes in attractive packages for the unit-based academic programmes.

In addition to the degree courses special one-off programmes have been prepared for the non-degree students. They range from electronics and basic computer literacy to courses in the basic economic and social problems of Israel.

There have, however, been problems of fitting what the Everyman's University can offer into the existing provision of vocational education. Are

its courses to be open-ended in the sense of providing a qualification for another, more formal, course ? Some efforts have been made to allow its technological courses to qualify students for the various diplomas offered under the auspices of the Israel Ministry of Labor.

So far no hard and fast rules have been laid down regarding age and attainment of students being accepted for courses. Last year the Everyman's University relied on students themselves assessing whether they would be able to keep up. Even this flexibility, however, did not prevent the university's first enrolment catching mainly people from professional and managerial backgrounds.

Another major problem, which might be easier to solve when the university reverts to government funding, is to link its flexible means of teaching with existing colleges. One of the ambitions of the Everyman's is that its courses and units should be utilized in primary teacher training in the colleges.

(*The Times Higher Education Supplement*, no. 273 (Jan. 1977), p. 13.)

569.5. JORDAN — JORDANIE

— Jordan's newest university, Yarmouk University, set up in Irbid, East Bank, received its first 800 students in December 1976.

The creation of Yarmouk University is part of Jordan's development plan for the northern part of the Kingdom, and it is expected that the growth of the University will be closely connected with the development of the region as a whole.

The University, which hopes to be fully established in its new 2,500 acre campus by 1984, has at present one Faculty, Humanities and Sciences. Science and technology at both the graduate and undergraduate levels will be offered with courses in engineering, medicine, dentistry, nursing, and agriculture, as well as humanities and the pure and social sciences. The medium of instruction in sciences and technology will be English, and the University as a whole will follow the American credit system.

When it is completed, Yarmouk's campus will include a 500-bed hospital and a model farm, together with all the usual instructional and recreational facilities. There will also be a civic centre, shops and offices, and buildings for various kinds of service organizations. The aim is to create an environment in which the University and the local community are closely integrated.

(*Bulletin of the International Association of Universities*, Vol. XXX, Nr. 1 (1977), p. 32.)

624. SUDAN — SOUDAN

— The Fourth General Conference of the Association of African Universities took place at the University of Khartoum from 6 to 9 December 1976.

The main theme of the discussions was the role of the university in cultural development in Africa and in a final resolution the Conference resolved that African universities should adopt an integrated approach to cultural development, intensifying research in various fields in African States and exploring all avenues for disseminating information on culture. The Conference further resolved that African universities should take steps to accelerate the process of Africanization and decolonization, give emphasis to the study of languages and communication, give leadership in the development of critical standards in all fields of culture, and explore ways of developing these as centres of the creative arts. In directing its attention to questions of university co-operation, the Conference devoted a special session to a discussion on the United Nations University and the African universities. This was introduced by the Rector of the United Nations University, Dr. *James M. Hester*, and its Vice-Rector, Dr. *A. A. Kwapong*.

At its final business session the Conference elected Professor *A. A. Abdalla*, Vice-Chancellor of the University of Khartoum, as President of the Association, and Professor *J. P. Ade Ajayi*, Vice-Chancellor of the University of Lagos, and Professor *Gabriel A. Johnson*, Recteur, Université du Bénin, as Vice-Presidents.

(*Bulletin of the International Association of Universities*, Vol. XXX, Nr. 1 (1977), p. 51.)

71. CANADA

— The following list of doctoral dissertation in progress at the Faculty of Education of Ottowa University was sent us by Mrs. *Mary Mulcahy*, Director of Graduate Programmes.

– *M. N. Ahmadyar :* 'A Survey and Analysis of Primary School Curriculum Development in Afghanistan from 1966 to 1976.' (tutor : Dr. *R. O'Reilly*) ;
– *J. Alfred :* 'Étude du phénomène pédagogie institutionnelle.' (tutor : Dr. *A. Côté*) ;
– *M. Amin :* 'The relationship between psychological Differentiation and performance on conditional reasoning tasks.' (tutor : Dr. *M. W. Boss*) ;
– *M. A. Bonneau :* 'The Evolution of a Model for the Professional Development of Elementary School Teachers.' (tutor : Dr. *R. O'Reilly*) ;
– *B. Borthwick :* 'The Evolution of Special Education Programs and Services for Orthopaedic Children in Ontario, 1911-1976.' (tutor : Committee : Drs. *P. Babin, J. M. Beniskos, M. Mulcahy*) ;

– *L. Bourque :* 'The Application of Atkinson's Motivation Theory to Achievement in Second Language Learning.' (tutor : Dr. *M. W. Boss*) ;
– *A. Y. Burns :* 'Trends in Parent Education in Canada, 1965-1975, as they Relate to Childhood Education.'
– *R. Butt :* 'The Development of a Conceptual System for the open Classroom.' (tutor : Dr. *P. Babin*) ;
– *M. C. Cao :* « Une analyse du comportement des organisations scolaires en relation avec leur environnement socio-politico-économique. » (tutor : Dr. *Y. Poirier*) ;
– *K. E. Coburn :* 'Piaget's Theory of Number and Extension to Decimal Numeration.' (tutor : Dr. *M. W. Boss*) ;
– *D. Common :* 'Towards a Model for the Evaluation of an Implemented Curriculum.' (tutor : Dr. *P. Babin*) ;
– *R. Condon :* 'Religious Commitment of Catholic Students in Secondary Schools.' (tutor : Dr. *R. O'Reilly*) ;
– *C. B. Cressman :* 'Pupil Teacher Interaction.' (tutor : Dr. *A. Côté*) ;
– *T. Crowder :* 'The Effect of Audio-Visual Tape Self-confrontation on the Self-concept of High Anxiety 12th-grade Students within a Client-centered Counseling Situation.' (tutor : Dr. *P. Turgeon*) ;
– *A. Cupparoni :* « Analyse phénoménologique de la prise de décision. » (tutor : Dr. *J. Ruda*) ;
– *S. Devinante :* « Le counseling de groupe avec les enseignants. Effet du 'C Group' sur le self concept des étudiants. » (tutor : Dr. *A. Côté*) ;
– *B. Donnelly :* 'The Relationship Between School Management Patterns and the Environmental Press on Students in Grades 7 and 8' (tutor : Dr. *I. I. Dow*);
– *L. Elias :* 'Perception of Senior High School Students in Relation to Sex Education Programs.' (tutor : Dr. *J. M. Beniskos*) ;
– *H. C. Fluehler :* « Le profil de personnalité des entraîneurs sportifs. » (tutors : Drs. *G. Artaud* and *A. Côté*) ;
– *E. Gagné :* « Stratégies de développement en éducation proposées par l'Unesco pour le Bangladesh avec recherche des implications pour la femme bengalie. » (tutor : Dr. *M. Mulcahy*) ;
– *J. R. Goodwin :* 'An Investigation into the Relationship of the Variables Size and Task Diversity and the Structural Dimensions in the Ontario Colleges of Applied Arts and Technology.' (tutor : Dr. *R. O'Reilly*) ;
– *C. J. Hambrick :* 'The Effectiveness of Learning Small Letters and Capital Letters in a Prereading Program.' (tutor : Dr. *A. Côté*) ;
– *J. L. Handley :* 'An Empirical Study of the Relationships among Desired Involvement in Curriculum Development, Curriculum Implementation, and Teacher Conceptual Systems.' (tutor : Dr. *P. Babin*) ;

– *G. S. Jolly :* 'Relation of Course Satisfaction to Congruence, Consistency, and Differentiation : A Test of Holland's Theory Within a Vocational High School Setting.' (tutor : *P. J. Patsula*) ;
– *A. Kawecki :* 'An Investigation of Achievement Motivation Theory at Successive Steps in a Contingent Path.' (tutor : Dr. *M. W. Boss*) ;
– *S. M. Kelly :* 'The Self-Concept of Adolescent Girls : A Test of Rogers' Theory.' (tutor : Dr. *P. J. Patsula*) ;
– *D. Klassen :* 'An Empirical Study of the Relationship Between Rogerian Counseling Conditions and Locus of Control.' (tutor : Dr. *P. P. Turgeon*) ;
– *R. Lallier :* « Le rôle du jeu de fiction dans le dévelopment de la représentation chez l'enfant de 2 à 7 ans. » (tutor : Dr. *A. Côté*) ;
– *P. Lapalme :* « L'influence du facteur émotionnel dans l'apprentissage d'un geste psychomateur. » (tutor : Dr. *A. Côté*) ;
– *A. Lavigne :* 'An Empirical Investigation of the Effect on Learning and Retention of a Multiple Channel Presentation of an Advance Organizer.' (tutor : Dr. *A. Côté*) ;
– *H. Le Blanc :* « Motivation chez les élèves du secondaire dans les cours d'éducation physique. » (tutor : Dr. *J.-M. Beniskos*) ;
– *Sr J. Létourneau :* « Evolution des écoles normales de jeunes filles au Québec, de 1857 à 1957. » (tutor : Dr. *L. Desjarlais*) ;
– *J. Lokan :* 'The Relationship Between Locus of Control and Super's Theory of Vocational Maturity in Adolescence.' (tutor : Dr. *M. W. Boss*) ;
– *A. Manning :* 'The Effects of Syntactic Maturity and Syntactic Complexity on Reading Comprehension : An Empirical Test on Smith's Psycholinguistic Theory of Reading,' (tutor : Dr. *A. Côté*) ;
– *A. Reid :* « Étude des perceptions et des attentes de rôle d'une université. » (tutor : Dr. *Y. Poirier*) ;
– *R. Rancourt :* 'A Study of Royce's Psycho-Epistemological Profile as a Predictor of Achievement Using Programmed Instruction.' (tutor : Dr. *R. Piché*) ;
– *M. St-Germain :* « Le concept du Système dans la Pensée de Ludwic Von Bertalaffy. » (tutor : Dr. *Y. Poirier*) ;
– *S. L. Swain :* 'Relation of Locus of Control to Congruence of Vocational Choice Among Highly Differentiated Male Highschool Students.' (tutor : Dr. *P. J. Patsula*) ;
– *S. S. Obidi :* 'Socio-economic Background ; Family Structure and Educational Performance : A Study of Secondary School Students in the Midwestern State of Nigeria.'
– *R. Rancourt :* 'An Exploratory Study of Educational Cognitive Style as a Predictor of Learning from Programmed Instruction.' (tutor : *R. Piché*) ;

–*T. Sibiga :* 'An Analysis of Training and Development Programs Offered to Public Servants by the Public Service Commission of Canada from 1968-1974.' (tutor : Dr. *R. Piché*) ;
– *A. Simmonds :* 'An Empirical Study of the Relationships Among Counselor Needs and Counselor Activitiess upon Level of Job Satisfaction.' (tutor : Dr. *P. P. Turgeon*) ;
– *M. Trask :* 'An Examination of the Relationships Among the Variables Organizational Size, Complexity and the Administrative Component in the Ontario School Boards.' (tutor : Dr. *R. O'Reilly*) ;
– *R. C. Wagner :* 'The Relationship of Cognitive Style and Classroom Environment to Academic Achievement : An Exploratory Study.' (tutor : Prof. *B. Logan* and Dr. *J. M. Beniskos*) ;
– *W. G. White :* 'The Life-Involvement Model of Curriculum and Instruction : A Theoretical Perspective.' (tutor : Dr. *P. Babin*) ;
– *R. A. Winstall :* 'Modifying the Behavior of Low Esteem High Anxious Adolescents Through their Participation in Courage-Inducing Activities : An Extension of Adler's Therapeutic Approach.' (tutor : Dr. *P. J. Patsula*).

— A la faculté d'Éducation de l'Université d'Ottowa, les thèses de doctorat suivantes ont été terminées :
– *A. Doucet :* 'The implications of rank ordering on the Clark-Trow typology of university students'. (Directeur : Dr. *R. O'Reilly*) ;
– *J. C. Fortin :* « Une étude descriptive des phénomènes de l'organisation, de l'administration et de la coordination ». (Directeur : Dr. *Y. Poirier*) ;
– *G. Gayle :* 'An integrative orientation towards learning a second language, authoritarianism and psychological differentiation'. (Directeur : Dr. *A. Côté*) ;
– *G. Goulet :* « Analyse comparative des notes attribuées au curriculum par un groupe d'auteurs choisis et ébauche d'une théorie générale ». (Directeur : Dr. *R. Piché*) ;
– *L. F. Klug :* 'An empirical investigation of the relationship between self-actualization and reconciliation with death.' (Directeur : Dr. *P. Turgeon*) ;
– *R. Knoop :* 'Dimensions of job satisfaction as determinants of organizational effectiveness.' (Directeur : Dr. *R. O'Reilly*) ;
– *A. D. Lazar :* 'An inquiry into the process of grammar concept attainment in the Franco-Ontarian junior school child.' (Directeur : Dr. *A. Côté*) ;
– *L. Lebel :* « L'effet des couleurs rouge-bleu sur la fluidite et l'originalité de la pensée divergente chez les introvertis et les extravertis. » (Directeur : Dr. *A. Côté*) ;
– *A. Lemieux :* « La communication par le langage comme moyen de transmission d'information : Dialectique orientée vers la présentation d'un modèle et de ses implications pédagogiques. » (Directeur : Dr. *A. Côté*) ;

– *S. J. Pasko :* 'The effect of varying the number of irrelevant attributes on area conservation performance.' (Directeur : Dr. *A. Côté*) ;
– *T. Pope :* 'An empirical study of the relationships between adherence to formal norms, competencies in fulfilling formal norms and leadership effectiveness.' (Directeur : Dr. *R. O'Reilly*) ;
– *S. K. Pura :* 'A study of teachers' attitudes towards parental volunteers in the classroom and their relationships to professional role orientation and situational job security.' (Directeur : Dr. *R. O'Reilly*) ;
– *M. M. Richard :* « La relation entre le climat organisationnel des écoles secondaires et le degré de consensus sur les attentes de rôle du conseiller : Une recherche expérimentale. » (Directeur : Dr. *M. V. Keith*) ;
– *F. M. Silver :* 'An empirical investigation of the relationship between teacher self-actualization and classroom openness.' (Directeur : Dr. *A. Côté*) ;
– *R. W. Sorochty :* 'Clarifying the concept of vocational maturity through the use of a career development program with High School freshmen and seniors.' (Directeur : Dr. *R. O'Reilly*) ;
– *J. Villeneuve :* « Réactions à l'illusion de Muller-Lyer et intelligence selon la théorie des centrations. » (Directeur : Dr. *A. Côté*).

73. U.S.A. — É.U.A.

— *Clermont Barnabe* has been appointed associate professor at the faculty of education of McGill University.
— The University of Delaware has named *Sylvia Farnham-Diggory* as H. Rodney Sharp Professor of Educational Foundations, and *Richard L. Venetzky* as UNIDEL Professor of Educational Foundations.

— The University of Pittsburgh and the Society for Intercultural Education, Training, and Research (SIETAR) have been granted $ 39,000 by the Bureau of Educational and Cultural Affairs of the U.S. Department of State to survey the state of intercultural research and training in the U.S. as well as abroad.

In the area of research the grant provides for the establishment of an advisory council on research composed of the following people : *Harry Triandis*, Department of Psychology, University of Illinois ; *Wallace Lambert*, Department of Psychology, McGill University ; *Alfred G. Smith*, Center for Communication Studies, University of Texas at Austin ; *Marshall Singer*, Graduate School of Public and International Affairs, University of Pittsburgh ; *Ruth Useem*, Institute for International Studies in Education, University of Michigan ; *Edward C. Stewart*, Washington International Center ; *Georges Spindler*, Department of Anthropology, Stanford University (invited).

The advisory council will review basic and evaluative research on intercultural communication, develop a conceptual framework for the field, and

suggest directions for research in the immediate future. In the training area the project will survey training theories and methodologies and attempt to evaluate them for effectiveness.

The project will result in a number of publications, including the reissue of Volumes II and III of 'Readings in Intercultural Communication', a volume on the role of intercultural communication in international relations, and volumes including the study itself and materials collected in it on cross-cultural training and research.

The project will be supervised by *David Hoopes*, executive secretary of SIETAR, and will be conducted by *George Renwick*, director of the University of Pittsburgh intercultural communications bibliographic project.

(*International Newsletter*, Nov. 196, p. 1.)

— 'Educational Research in Classrooms and Schools' by *Louis Cohen* is a manual specially designed for advanced students of education reading for BEd degrees or for diplomas and higher degrees in education. It aims to introduce the reader to the techniques of observing pupils and teachers in the classroom; to develop an understanding of techniques of analysis by way of interpreting observations; and to suggest research topics the reader could undertake. The handbook is published by Harper and Row.

— The University of Southern California School of Education has assumed the responsibility for publishing 'Educational Research Quarterly'. The journal was published formerly by the California Teachers Association as 'California Journal of Educational Research'. The stated purpose of the journal is 'to serve a broad professional community of educational researchers and practitioners by disseminating high quality original research with implications for educational practice.' Persons interested in contributing manuscripts should write for instructions for contributors to: *Audrey J. Schwartz*, Manuscript Editor, 'Educational Research Quarterly', University of Southern California, University Park, Los Angeles, CA 90007.

— Human Sciences Press announces the establishment of a new journal, 'Alternative Higher Education, The Journal of Research and Development in Non-Traditional Study'. Edited by *William A. McCallum*, Kansas State University, the journal will be devoted to research and the dissemination of information related to experimental learning, continuing education, multi-media instruction, lifelong learning and outreach programs. Annual subscription rates for the semi-annual journal are $ 7.95 for individuals and $ 16.00 for institutions. Order from Human Sciences Press, 72 Fifth Ave., New York, NY 10011.

— A project to improve the first through sixth grade reading and mathematics skills of educationally disadvantaged children, using a computer-based instructional system (CBI) and tutoring, was begun last year by the Sierra Vista (Arizona) Public School System under a Title I grant for the first year of operation.

Each of the programs CBI in mathematics at grades one through six; tutoring in reading at grades one through three and CBI in grades three through six) was helpful to the students. However, the CBI program achieved its results with only ten minutes of practice a day by students, while the tutoring program required a considerable environmental adjustment to accommodate tutors, their space requirements, extra learning time, etc. For efficiency reasons, therefore, only the CBI program in mathematics and reading currently was extended to the junior high school level. Tutoring in reading at grades one through three was continued during the current year because the sounds of language, for development of auditory skills in reading, are not available through the CBI programs.

Further information relative to the program may be obtained by inquiring from *Norman Chestnut,* Director, Pupil Placement Services, Sierra Vista Public School System, 4001 Fry Blvd. NE, Sierra Vista, AZ 85635.

(*Educational Researcher,* Vol. 6, No. 4, p. 19.)

INFORMATION COMPILED

by

PROF. DR. WM. REITZ and PROF. DR. C. ERWIN
Wayne State University
and graduate students enrolled in courses in Educational
Evaluation and Research, College of Education.

— *R. G. Beery* wrote an article on 'The Fear of Failure in the Student Experience'. The major purpose of the article is to give professional counselors some exposure to and an understanding on a conceptual level of the fear of failure syndrome, in hopes that it might promote some new counseling perspectives. The author believes that fear of failure is not only a problem among students but it exists in all of us, naturally ingrained in us as we grow up in this society. The symptoms are illustrated by three cases, 'Afloat but drifing', 'Reaching too high too soon', and 'A near perfect record'. Levels of aspiration are discussed with reference to unrealistic aspirations and their relation to the academic counterparts of undershooting and overshooting. It is hypothesized that people prevent 'the fear of failure' from occurring by using these various strategies to avoid the internal assumption of worthlessness. Understanding this counselors can hopefully better understand their clients and effectively assist them to develop a sense of well being and self esteem.

(*Personnel and Guidance Journal*, Dec. 1975, pp. 191-203.)

— In their article on the 'Effect of Instructional Pace on Student Attentiveness', *R. P. Grobe* and *T. J. Pettibone* conducted an observational study which examined the effect of instructional pace on 42 introductory psychology students that met for 50 minutes each Monday and Wednesday at the New Mexico State University. The study which utilized a camera and video tape machine recorded five aspects of student behavior such as (1) individual attentiveness, (2) nondistruptive inattentiveness, (3) comfortable or nervous behavior, (4) interactive attentiveness and (5) disruptive inattentiveness. Results indicated that of the three speeds of instructional paces – slow, moderate and fast – the latter had a direct bearing on two of the five behaviors studied. Fast instructional presentations increased individual attentive behavior such as class note taking and focusing on the instructor while decreasing aspects of nondisruptive inattentive behavior of sleeping, clock watching and staring into space.

(*The Journal of Educational Research*, Vol. 69, No. 4 (1975), pp. 131-134.)

— In his article on 'The Effectiveness of Reinforcement, Response Costs, and mixed programs on classroom Behaviors', *Y. Hundert* employed an experiment to find the relative effectiveness of three intervention techniques for attending and correct arithmetic performance : 1) token reinforcement contingent upon attending and correct arithmetic performance, 2) response cost, where free tokens (noncontingent) were given at the onset of the day and token removal was contingent upon inattention and lower-than-specified arithmetic performance, 3) a combination of token reinforcement and response cost. Six elementary school children were the subjects who received all three procedures in counter balanced sequence. The effects of the procedures were analyzed through an intra-subject comparison divided into : a) baseline, b) training (the intervention procedures), and c) withdrawal of tokens. Results show a marked increase of the dependent measures through the use of the intervention procedures, but there were no noted differences accountable to the individual procedures. During baseline, subject attending behavior averaged 29 % and the number of correct arithmetic problems averaged 6.4. During training, these levels increased to 85 % and 11.4. Withdrawal of all techniques resulted in significant reduction in attending and a nonsignificant reduction in arithmetic performance.

(*Journal of Applied Behavior Analysis*, Vol. 9, No. 1 (1976), p. 107.)

— *G. W. Jorgenson* is the author of 'An Analysis of Teacher Judgments of Reading Level'.

Eighty-four elementary school teachers estimated the grade level equivalents of reading paragraphs to determine whether skill in making such judgments existed, and whether there were significant differences between the level of judgements of teachers in urban and suburban schools. The results indicated that skill in making accurate judgements varies widely, and that teachers in urban schools make significantly higher estimations of grade level equivalents than suburban teachers. This urban-suburban difference was interpreted as indicating that teachers in urban schools may have a lower achievement standard than teachers in suburban schools. The results of the study indicate further research is needed to determine whether the levels of judgment reflect teacher expectations, and whether these operate as self-fulfilling prophecies by moderating the level of a teacher's reading instruction and thereby the achievement of the students.

(*American Educational Research Journal*, Vol. 12, No. 1, pp. 67-75.)

— A research project was conducted in the fall of 1974 at Harvard University by *David C. McClelland* of Harvard, *David Winter* of Wesleyan, and *Abigail Stewart* of Boston University, to measure the intellectual skills and mental qualities of undergraduate students at three different institutions. A compa-

rison was made of the scores from an unspecified Ivy League university, a small four-year college and a junior college. Three new testing methods were used to assess individual differences. One method involved the presentation of oral information on tape with instructions to fill in the blanks in sentences developed from the material. Another technique involved the comparison of two different 'imaginative stores'. The final method required students to argue for or against a given position in an article whose theme most of the students opposed. The major findings of the project indicated that in certain academic areas, undergraduates from the academically weaker schools performed as well as their counterparts at the Ivy League school, senior women students at the Ivy League institution displayed a greater fear of success than any other group, and the best students were often the most unhappy later in life.

(*The Chronicle of Higher Education*, Vol. XIII, No. 10 (1976).)

— A three-experiment study was conducted by *L. Keith Miller* and *F. Hal Weaver* and published under the title 'A Behavioral Technology for Producing Concept Formation in University Students'. The first was designed to analyze the effect on concept formation through the use of a textbook with Personalized System of Instruction (concept programming included). The second experiment was designed to analyze and compare the effects of concept programming versus other textbook portions. The third experiment was designed to compare the overall effectiveness of the concept programmed textbook in producing concept formation over other, more common textbook procedures. The 38 total subjects were undergraduate students enrolled in introductory behavior analysis courses at the University of Kansas and the University of Oregon. Concept programming consisted of students determining the concept illustrated in each of 20 fictional stories; initially, prompting was heavy. The first experiment demonstrated that students generalize (learn concept formation) by responding correctly to novel examples. The second experiment demonstrated that the intervention method, using the concept programming section of the text, is an important factor in producing this generalization. The third experiment demonstrated that using texts with concept programming is a greater producer of concept formation than are more traditional textbooks.

(*Journal of Applied Behavior Analysis*, Vol. 9, No. 3 (1976), pp. 289-300).

— *Nathalie Sproull*, Western Illinois University, investigated 'Visual Attention, Modeling Behaviors, and Other Verbal and Nonverbal Meta-Communication of Prekindergarten Children Viewing Sesame Street'. Thirty prekindergarten children, randomly assigned, were video-taped while viewing the same pre-taped Sesame Street program either as single viewers (N = 6) or as group viewers (6 groups of 4's each). Video-tapes were systematically coded for visual attention, modeling behaviors, and other meta-communication. Both

groups and single viewers averaged eye contact with over 80 % of the program despite exhibiting more than one nonviewing behavior per minute and high mobility while viewing. Group viewers exhibited a large number and variety of verbal and nonverbal, targeted and (probably) nontargeted modeling behaviors ; single viewers much fewer. Overt program-elicited amusement was more frequent for groups than for singles. Children exhibited vicarious participation as evidenced by one direct reaction to the program about every four minutes. Other behaviors included (a) labeling, (b) program appeal behaviors, (c) associating, (d) fear references, (e) evaluating, (f) reading, (g) predicting, and (h) nonprogram related verbalization.

(*American Educational Research Journal*, Vol. 12, No. 1 (1975), pp. 67-75).

— The National Advisory Council on Education Professions Development warns that 'Mainstreaming' handicapped children in regular classrooms could result in poor education for both normal and handicapped students 'unless there is a major effort to help classroom teachers cope with these special children.'

Court decisions and federal laws calling for teaching the handicapped in the 'least restrictive' environment may combine with shrinking school budgets to put all but the most severely handicapped in regular classroom without adequate consideration. Council recommends :

i. Handicapped children can achieve more academically and socially if they are not isolated,

ii. a regular school setting can help them better cope with the 'real' world when they grow up, and

iii. exposure to handicapped children helps normal children understand individual differences in people.

iv. More federal money for special training and support surcices.

— 'AV Communication Review' is sponsoring an annual AVCR Young Scholar Award for contributors of unpublished original work on research theory in Educational Technology. The author of the winning manuscript will receive a prize of two-hundred and fifty dollars ($ 250), and the paper will be published in 'AV Communication Review'. Those entering the competition must not be more than three (3) years beyond a doctorate as of September 1 of the year the award is given. Persons without doctorates may also submit papers. For further information contact : *Robert Heinich*, AVCR Editor, Young Scholar Award Paper, Audio-Visual Center, Indiana University, Bloomington, IN 47401, USA.

— The Research and Development Center for Teacher Education, University of Texas at Austin has found that statistical technology has not been developed

to identify accurately the different effects of instruction on different students even when as few as two kinds of learning outcomes are considered. What is needed is research that reasonably reflects the multivariate nature of real life learning and the interacting effects of teacher and learner characteristics as they effect important outcomes of education.

Eight education propositions developed in the study :

1. In order to design education that promotes student learning without causing undesirable side effects, it is necessary to evaluate several outcomes simultaneously.
2. Students affect teacher's behavior as teachers affect student's behavior.
3. There are important differences in the dynamics of the learning process among students of different cultures. No single style of teaching works equally well with all of them.
4. A crucial challenge, worldwide, is to invent educational strategies that will reduce the very large learning gap between middle-class and working-class children.
5. The emotional adjustment of students often has a powerful effect on their learning.
6. To study each of these problems and design more effective schooling requires a logical model that examines the interacting effects of teaching strategies and student characteristics on multiple outcomes of instruction.
7. The most effective learning system is one which identifies and addresses each student's particular intellectual and emotional needs.
8. The hardest step of all is to achieve general adoption of an improved educational program.

The greatest obstacle to any personalized model of teacher education is the need for major social engineering.

The particular 'learning needs profile' of each student teacher needs to be determined.

Deep legislative and regental institutional resistance to such change is to be expected.

82. ARGENTINE

— Le ministère argentin de la culture et de l'éducation nationale a fixé un « numerus clausus » pour l'admission en première année, en 1977, dans les vingt-six universités nationales du pays.

En 1976, le nombre d'inscrits en première année était de 116.942 ; cette année, il sera de 69.159, soit 40,8 % de moins.

Le nombre des admissions autorisées est déterminé de façon précise par université et par faculté. Les chiffres sont respectivement les suivants : Buenos

Aires (12.950), Córdoba (6.530), La Plata (7.796), Rosario (3.480), Santa Fé (Litoral) (2.820), Université technologique (dix centres dans le pays) (6.170), Tucumán (2.695).

Le décret précise également le nombre exact d'étudiants pouvant être admis dans chaque faculté de chaque université. Par exemple, sur les 6.530 étudiants pouvant être admis à l'Université nationale de Córdoba, il en est prévu 1.280 en sciences exactes (ingénieurs, biologie, géologie), 800 en sciences paramédicales, 780 en sciences humaines (philosophie, lettres, psychologie, éducation), 650 en médecine, 600 en sciences auxiliaires de la médecine, 500 en droit.

Pour l'ensemble du pays, les 69.159 étudiants se répartissent comme suit : 31.608 en sciences de base et technologiques, 18.749 en sciences sociales, 10.842 en sciences humaines, 7.960 en médecine. Chaque université a également fixé le pourcentage des étudiants étrangers pouvant être admis.

(*Bulletin de l'Association Internationale des Universités,* Vol. XXX, No. 1 (1977), p. 30).

85. PERU — PÉROU

— The Asociación Peruana de Educación de Adultos (APEA), Lima, and the Universidad Particular Inca Garcilaso de la Vega, Lima, have organized the First International Seminar on Andragogics in Lima.

The general points of the Seminar include : 1) andragogics as a new educational science ; 2) andragogics as an educational science in Venezuela. The experience acquired at the Simón Rodríguez National Experimental University of Venezuela, Caracas, should be taken into account by educational and scientific research institutions ; 3) andragogics in the context of educational reform ; 4) feasibility of applying the specialized principles of andragogics in Peru.

(*Bulletin of the International Association of Universities,* Vol. XXX, Nr. 1 (1977), pp. 30-31).

COMMUNICATIONES

General Secretariat

of the

World Association for the Advancement of Educational Research

Secrétariat Général

de

l'Association Mondiale des Sciences de l'Education

Prof. Dr. M.-L. van HERREWEGHE

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The 7th World Congress was held at Gent (Belgium) July 25th-29th 1977 under the chairmanship of Prof. Dr. M.-L. VAN HERREWEGHE and the honorary president Prof. Dr. R. VERBIST. Patron was his Majesty King BAUDOUIN of Belgium.

In this first part of the 'Communicationes' which is sent to all members of the World Association for the Advancement of Educational Research (W.A.A.E.R.) one will find information on some essential points. Concerning our Association which were dealt with in the working-sessions reserved to the I.A.A.E.R., as well as the major lines of the work realized during the Congres.

This means : the results of the meeting of the Board and the General Assembly, the abstract of the reports which were presented during the plenary sessions of the Congress, as well as the final motion sent to the responsable politicians and to the different representative educational associations.

In the course of the meetings concerned with the questions of the Association, it was decided, in response to the question of the participants from five continents, repercuting 57 nations, to use henceforward the denomination :

'World Association for the Advancement of Educational Research' (W.A.A.E.R.)

and to set up a permanent General Secretariat at Gent State University, which becomes thus the registered office of the Association under the direction of Prof. Dr. M.-L. VAN HERREWEGHE. The address is :

General Secretariat of the W.A.A.E.R.
Rijksuniversiteit Gent
Pedagogisch Laboratorium
Henri Dunantlaan 1
B-9000 Gent (Belgium)

The following persons were elected as members of the Board of the Association (for a period of 4 years) :

- Prof. Dr. M.-L. van Herreweghe – Gent – Belgium – President
- Prof. Dr. H. Klein – Berlin – German Democratic Republic
- Prof. Dr. M. Koskenniemi – Helsinki – Finland
- Prof. Dr. G. Mialaret – Caen – France
- Prof. Dr. M. Sutherland – Leeds – England

The following persons were elected as members of the Council :

J. W. L. Adams – Dundee – Scotland

A. Clausse – Liège – Belgium
R. D'Aeth – Exeter – England
U. Dahllöf – Stockholm – Sweden
M. Debesse – Antony – France
L. Desjarlais – Ottawa – Canada
K. Galla – Prague – Czechoslovakia
Kn. Gru-Sørensen – Copenhagen – Denmark
C. Irwin – Detroit – United States of America
Th. Kellaghan – Dublin – Eire
A. Mungala Sanzong – Kisangani – Zaire
G. D. Piryov – Sofia – Bulgaria
N. Potkonjak – Belgrade – Yugoslavia
J. Sandven, President of the Council – Oslo – Norway
H. Scheuerl – Hamburg – German Federal Republic
M. Shoji – Hiroshima – Japan
J. Szarka – Budapest – Hungary
L. Volpicelli – Roma – Italia
J. D. Vrey – Pretoria – South Africa
I. Wojnar – Warszawa – Poland

The regulations will be reworked by the members of the Board, submitted to a critical review by the representatives of the different countries, members of the Council, and then presented to all members of the W.A.A.E.R.

The members of the Council have attributed unanimously the title of Honorary Member of the Association to Prof. Dr. B. SUCHODOLSKI, Warszawa, Poland.

ABSTRACTS OF THE REPORTS PRESENTED DURING THE PLENARY SESSIONS OF THE 7th WORLD CONGRESS OF THE I.A.A.E.R.

PROFESSOR DR. JOHS. SANDVEN (University of Oslo, Norway), President of the I.A.A.E.R. Council :

Conditions for self-realization. Some principal viewpoints.

The presentation is centred around four sub-topics :
- the meaning of self-realization ;
- basic factors in self-realization ;
- school conditions and self-realization ;
- self-conception as a factor of self-realization.

The concept of self-realization is taken to imply that the individual is in possession of certain potentials and that these potentials may be developed in such a way that they manifest themselves and become functioning realities in daily life. It is regarded as important that the term potentiality should refer to the personality as a whole, with all its areas of functioning, thus including not only the intellectual area, but also the social and emotional ones.

The fact that the intellectual functions are more easily distinguished and defined than others is regarded as a major reason for the great attention which they tend to attract and for the strong emphasis they have been given. A more equal weighting of our efforts to plan for developmental conditions is advocated.

The question is raised to what extent development of a potential must have taken place in order to conclude that self-realization has occurred. Though development to the extent possible may seem desirable, it is pointed out that strong emphasis on one functional area may be detrimental to other areas and that all areas should be kept in mind. Self-realization is a goal for the human personality taken as a whole. In line with this it is regarded as more appropriate to talk about an optimal degree of self-realization than about a maximum one.

As to conditions for self-realization, it is stressed as particularly important that the environmental world is shaped not only to give the necessary protection to foster the feeling of security, but also to provide the necessary amount of challenge in order to allow the developing individual to reach forward and to try to manage something beyond what is already mastered. It is stated that the need for protection has been emphasized in the post-war period, but almost exclusively for the early years of living. As regards the ordinary school years and the adolescent period we have continued an education system which for a considerable part of the students has neglected the need for protection and over-emphasized the factor of challenge. In addition we have not made sufficient effort to clarify for the individual student to what extent and in which directions challenge would be appropriate and how challenge and protection should be balanced.

In short the situation is that in many parts of the world basic conditions for self-realization are meagre or almost non-existent, whereas in other parts resources have been used in a constantly increasing measure with the intention of extending and equalizing the educational opportunities. In spite of this the development of our children continues to be regarded with concern also in the so-called developed countries.

It is stated that part of the explanation may be that the development conditions which we have tried to prepare have not been structured and put into action in a way which has corresponded to the needs of the different children with their diverse and unique potentialities, and – in particular – that we have not been able enough to find the proper balance between protection and challenge.

Our dilemma is seen partly as a result of the fact that our concept of general education to a great extent has been defined in terms of subject-matter. If it had been related in greater measure to the student as a person, to his development as a well-functioning human being, and less to his acquisition of knowledge, it is considered likely that our dilemma would have been less serious. As the compulsory school and the school opportunities in general have been extended, this emphasis on the subject-oriented tradition has increased and prolonged the difficulties for a considerable proportion of the students.

Investigations are cited which make clear that many students have lost their sense of well-being and would like to leave school immediately if they were allowed to. Psychiatric investigation concludes that among students in the 9th grade in Oslo about 20 % are maladjusted. Lack of progress in school is the most marked difference between those who accept the school and those who reject it. Investigation among teachers brings to light that they too experience the situation as difficult, in spite of the expansions and investments being made.

Though the conditions of an economic and material nature are important, the development of these conditions to a high level does not in itself guarantee that self-realization will take place.

The character of the environment from a psycho-educational point of view is considered to be particularly important. Especially it is regarded as essential that the educator develops an adequate conception of the child's potentialities because this is not only important in his efforts to find a proper balance between protection and challenge, but also influences the way in which the child develops his self-image.

A study into the causes of lack of self-realization brough to light that an inadequate self-conception on the part of the child as well as an inadequate conception of the child's potentialities on the part of the teacher were the observations most commonly made in cases where lack of self-realization had occurred.

To extend the school and to make it available to greater numbers of students is an improvement in the conditions of self-realization from a formal and material point of view. It is maintained, however, that this will hardly result in a real improvement in the conditions for the individual student unless we have acquired an adequate conception of his potential possibilities and unless challenges have been found which correspond to these possibilities.

PROFESSOR DR. H. KLEIN (Rector of the Humboldt Universität, Democratic Republic of Germany) :

The concept 'self-realization' and the relation of self-realization and education from a marxist-leninist eduational viewpoint.

1. The author enters into the discussion of the theme in a polemic way, because 'self-realization through education' could give the impression that man actualizes himself only or mainly in educational processes.

In order to delineate his own point of view, the author deals with :
– the definition of the concept of self-realization from a marxist-leninist viewpoint (philosophical, sociological, economical) ;
– a polemic discussion of some oppositional ideas in contemporary, non-marxist philosophy and sociology ;
– the relations between self-realization on the one hand and 'appropiation and actualization of the fundamental potential' as well as between individual and common development, on the other hand ;
– basic ideas about the determination and the general laws of personality development. In this context the author deals also with the relation between the biological and the social and with the possibilities and limits of education as being dependent on the character of the different classes of society.

2. As an implication of the explanations of the fundamentals dealt with in ch. 1, the author describes in ch. 2 the consequences for policy and education as they were and are realized in socialist countries.

The experiences and insights gathered from these practical realizations will be discussed in view of the development and the actual situation in the D.D.R.

PROFESSOR DR. G. MIALARET (Université de Caen, France), President of the I.A.A.E.R. :

Pedagogical methods and the formation of personality.

I. *Introduction.*

Education is a particularly complex phenomenon as well in its processes as in its results. People made many studies concerning the importance of external factors (e.g. social environment) or the relation teacher-pupil, but we rarely find studies concerning the action of pedagogical methods and techniques themselves.

II. *Formation of personality.*

1. In order to study the action of pedagogical methods on the evolution of personality, we have to specify what we mean by personality and by the development of personality.
2. Basically the proposed theory is inspired by the works of Henri Wallon, but it takes into consideration the contributions of other headlines of contemporary psychology as well (psychoanalysis and the monumental work of J. Piaget).
3. The evolution of personality will be presented as the result of the actual experience of the child through the 'dialectics' of the biological and the social, i.e. in function of the conditions of life of the subject.

III. *The pedagogical action.*

1. Among these conditions of life, the institution 'school', place of transmission of Knowledge and initiation into the Culture, plays an important role.
2. School disciplines and the process of learning.

The school is characterized by programmes or subjects. The initiation of the child into these disciplines supposes learning. We examine the problems emerging from the difference which exists between the mental processes – underlying a discipline – and the processes of real learning permitted by the psychological level of the pupils.

3. Pedagogical methods and techniques.

a. Arbitrarily we can classify the great pedagogical methods with regard to the type of psychological activity, which they require. The question is asked how ties with the development of personality are established.
b. Scientific studies have been made to characterize the pedagogical methods and to establish their consequences for the evolution of the pupils.

IV. *Summarizing analysis of some problems.*

1. Pedagogical method and personality of the child.
2. Pedagogical method and personality of the educator.
3. Pedagogical method and the expectations of the environment ; relations between the 'pedagogical aspect' and 'power'.

V. *Conclusions.*

Education does not only act through its contents, but also through its methods and its procedures. The importance of the pedagogical formation of educators is stressed.

PROFESSOR DR. WM. REITZ & PROFESSOR DR. C. IRWIN (Wayne State University, Detroit, U.S.A.) :

Innovative outreaches of education in the U.S.A. : Content - Substance and Research Methodologies.

Introduction.

The general Congress theme, 'self-realization through education' suggests a multitude of directions, dimensions, routes, projects, and problems referring to the educational scene in the U.S.A. Education and school concerns and problems are being met for solution by diverse innovations and programs and often by sophisticated research techniques and methodologies. The present companion papers, namely, 'Innovative Outreaches-Content' (Claire Irwin) and 'Research Methodologies' (Wm. Reitz) will, in the main, be directed respectively toward (1) presenting a panoramic view of new developments and projects in professional education related to self-realization, within school situations ; and (2) describing selectively research techniques preceding, used within, and/or after projects are completed for validation and evaluation.

Context.

The roots of self-realization for the individual run deep in the main currents of world and American thought, culture, and commitment. An overview of relevant events will reveal associations and activities, great names and noteworthy advances in the past, present, and projected to the future. To name a few : in philosophy and the arts (Dewey, Huxley, Kohlberg, Emerson, and Whitman) ; in humanistic psychology (Carl Rogers, A. H. Maslow, Allport, Combs, Jourard, and John Cohen) ; in therapeutic and clinical approaches and Sensitivity Training (William Glasser, Virginia Starr, Fritz Perls) ; in Cults (Alan Watts and Zen, Transcendental Meditation, Pyramid Power) ; from minority voices (Rev. Jesse Jackson and PUSH – Cesar Chavez representing Latino culture) ; and the overwhelming range and diversity of innovative school projects, programs, and reforms – all designed to celebrate the individual in his uniqueness and to discover and encourage each person's ultimate potentialities to achieve 'peak experience'. This new humanistic philosophy has generated new concepts of learning, of teaching, and of schooling at large. As Maslow, the 'father' of self-realization, has stated : ... the function of education, the goal of education – the human goal, the humanistic goal, the goal so far as human beings are concerned – is ultimately the „self-actualization' of a person, the becoming fully human, the development of the fullest height that the human species can stand up to or that particular individual can come to. In a less technical way, it is helping the person to become the best that he is able to become.

In his book, 'Who Are You', Raymond Gale synthesizes the viewpoints of Rogers, Maslow, Allport, Combs, and Jourard by presenting a 'humanistic model of the person'. The catalogue is as follows :

1. Each person is worthy of the dignity and respect that inheres in being a human life.
2. A human being experiences continuity and dynamic strivings toward growth throughout his life span and is capable of merging the past and future into a meaningful now self-awareness.
3. A person is the developmental product of an inner core (the self) which is continuously developed and modified by experience.
4. Strivings toward growth and the expansion of self receive form and direction from each individual's unique self-ideal, which is his own subjective creation with the biosociopsychological framework of a specific life flow.
5. Each human being is an idiosyncratic and self-consistent organization of beliefs, values, feelings, and actions manifested in his particular life flow.
6. Self-consistency and uniqueness are reflected in the creative power accorded to a person's life flow, formed in congruence with his self-ideal, as he gives birth to his distinctive human potentialities.
7. An individual's strivings within his life flow influence his perceptions of his phenonmenal field, which develop a personal referrent for formulating interpretations of the self and others.
8. Behavior influences significantly by one's valuation of self and his world and by goal directedness of the self-ideal.
9. The individual is inextricably embedded within his societal environment and develops self and the unique 'truth' of his own life flow through the personal-social dynamics of human experiences.
10. In an acceptant and somewhat non-threatening phenonmental field, a person can learn behavior that is basically open, self- and others-trusting, interactive, empathetic, and constructive.
11. Dignity, worth, freedom, responsibility, and integrity emerge as human characteristics in an invironment that offers unconditionality of human regard and that provides for opportunities to maintain and to enhance the self.
12. Interactions with facilitating people is the strongest influence in the development and the perpetuation of the self-concept of a fully functioning person who behaves creatively, consistently, and holistically.

Professional education in the U.S.A. is marked by a large number of projects, innovations, and programs reflecting current emphasis : affective education, values clarification, moral education, self-determination, self-concept development, self-evaluation, self-congruence, Black Power, locus of control, manpower development, role theory, self-esteem, occupational aspiration, humanistic education and another key term contributed by Maslow a few years ago, self-actualization.

In capsule, then, professional education in the U.S.A. in a great number of efforts is deeply concerned philosophically and actually with 'man' making 'man' into 'man' for the sake of 'man' but also cognizant of semantics, sensitivities, and the emerging roles of women, will probably substitute for the term 'man' the term, 'peoplemaking'.

The aftermath of Watergate, the emergence of vocal leadership on behalf of minority groups and their deep-seated problems and concerns, the recognition of women's rights have all spurred national concern for the re-examination of American school systems and value systems in terms of respect for the individual – 'his' human rights and responsibilities.

Structure for inquiry.

Directions and perspectives for these presentations were derived from a comprehensive national search of the published (Current Index of Journals in Education) and unpublished literature (ERIC Network) relating to self-realization, self-actualization, and self-enhancing education over a five-year period (1972-1977) thus to locate innovative practices and projects along with research techniques, methodologies, and designs employed by offices, agencies, and individuals in the search for the clarification and accentuation of human values as a proper goal of education. Personal contacts were also made with key personnel associated with programs and research centers to nominate which was important. By these means, several hundred studies were examined and analyzed.

Organization.

In order to present directions and research on-going in the U.S.A., various alternatives for the present organization were examined. For purposes of clarity and coverage, the following plan for articulation was chosen. Seven categories, essential to teaching, were selected in which to report content or substance. In each domain, examples of research methodologies employed internally and externally will be sketched. The categories by level and content are as follows :

1. The Learner (Child, Pupil, Student, Adult).
Needs Assessment/Minority Students – Blacks, Latinos, American Indians, etc. Socio-Economic Indexes, Self-concept.
2. The Educator (Teacher, Administrator, Staff).
Teacher aids, training models ; collective bargaining ; Differential staffing, Teacher expectations.
3. Objectives, Goals, Aims, Purposes, Curriculum, Programs.
Human Approaches ; Behavioral Objectives ; Compensatory Education ; Creativity ; Drug Abuse ; Ecology ; Career Education ; Outdoor Education ; Cognitive/Affective Domains ; Perceptual-motor Learning ; Family Education ; Parent and community participation ; Psycho-motor domain.
4. Teaching, Methods, Didactics.
Individualization of Instruction ; Team Teaching ; Variety in Teaching Presentations : Micro-Teaching ; Montessori Methods, Simulation.
5. Learning – Internalization.
Multi-Media Centers ; Pupil Team Learning ; Computer-Assisted Instruction ; Discovery Learning ; Community Resources ; Cognitive styles and Cognitive Mapping ; Sesame Street and other television programs ; Tutorial Methods.

6. Evalution – Assessment – Program Evaluation – Curriculum Evaluation. National Assessment ; State Assessment Models ; Evaluation Models (CIPP, Stake, Scriven, Provus, and others).
7. Context, Organization, Administration, Climate, Community.
Accountability ; Flexibility, Systems approaches, Bussing ; Community schools ; School Parks ; Open Schools ; Non-graded Schools ; Parochiad ; Performance Contracting ; Voucher System ; Year-round school ; Middle Schools ; Free Schools ; National Institute of Education ; Office of Education ; Regional Educational Laboratories ; Acts of Congress ; ESEA Act of 1965 ; Commissions, Committees, Conferences, Institutes, Professional Associations ; Great Cities ; Court Decisions.

Research Methodologies.

In connection with projects and programs, a wide range of research designs, techniques, and methodologies have been or are being utilized including questionnaires, interviews, rating scales, school records, demographic data analysis, specialized instruments such as the Minnesota Multiphasic Personality Inventory (M.M.P.I.), the Thematic Apperception Test (TAT), the Personal Orientation Inventory (POI) ; Totter's Locus of Control Scale ; Self Evaluational Techniques ; the Ohio Social Acceptance Scale ; the Battle Attitude Scale, and Osgood's Semantic Differential Scale techniques ; the Sear's Self Concept Inventory, Graphic Explanations, and many others.

Statistical techniques include basic statistics and significance testing of differences between means (t-tests) ; analysis of variance, and correlational analysis of various types.

Force field analysis, and research in naturalistic settings also appear. Occassionally a factorial design can be found along with the use of multiple R's for prediction purposes.

More ambitious research methodologies include Factor Analytic Studies, Cluster Analysis and variations of factor analytic techniques such as Alpha Factor Analysis, and Principal Components Analysis. The Q-Methodology developed originally by Stephenson has also been applied. Phenomenological analyses has been selectively applied.

In the way of summary and conclusions, net gains of the great innovations and research efforts will be assessed and evaluated.

PROFESSOR DR. H. SCHEUERL (Hamburg Universität, Federal Republic of Germany) :

Problems of 'self-realization' in the West-German educational discussion.

1. The congress-theme is broadly formulated and can be interpreted in many ways. The author will explore some interpretations (and the traditional German pedagogy which they reflect), worked out in the B.R.D. Next to some didactic and organisatory implications typical historic and philosophic relations will be discussed.

2. Since 1968, self-realization has gained special attention in the B.R.D. as a consequence of the students' protest movement. However, the basic problem is of a more principal nature and has a long history. The congress-theme is characterized by the fact that every element in it can be questioned. Even the conjunction 'through' (par/durch) is susceptible of discussion, as it suggests a causal relation which can lead to controversial interpretations.
3. My paper will try to inquire into some typical interpretations of the words 'self' ('personality'), 'realization' and 'education'. At the same time related concepts such as 'socialization', 'enculturation', 'the conditioning of behaviour', and 'formation' will be discussed. From some different views of the relation between education and self-realization ('Menschenbild-Pädagogik', technological, dialogic and interactionistic model), I shall briefly point out different curricular and organisational consequences.
4. A few positions of the traditional, so-called 'geisteswissenschaftliche' German educational science will be confronted with tendencies of the critical rationalism since 1960 which insists on a more rigorous operationalization of the statements. From both directions new patterns of interpretations ('ideologiekritisch') have been developed since the end of the sixties. They follow the so-called critical theory of the 'Frankfurter Schule' on the level of the theory of society and they try to dissociate themselves from the insinuation of traditionalism – often attached to the humanities – as well as from the insinuation of technicism – often attached to the empirists and rationalists.
5. Such conflicts of tendencies have controlled the subject of discussion in the B.R.D. for years. However, the educational means towards self-realization, prove that there are only exclusive alternatives when one view is claimed to be absolute. My paper will be a plea for a reflection on the continuity, the communality and the mutual complements in the views and also for a modest rehabilitation of the German concept of 'Bildung'.

PROFESSOR DR. B. SUCHODOLSKI [1] & PROFESSOR DR. I. WOJNAR [2] (University of Warszawa, Poland) :

The educational act-directivity or inspiration [1].

1. The question of the essence of the educational act always remains up-to-date. One can observe two aspects of the educational influence, already manifested on the historical level :
– The level of knowledge and skills, preparatory to the accomplishment of professional and social functions.
– The more profound level of personality : attitudes and aspirations, emotional and imaginary content of the existence, feeling of sense of life, modes and models of life, self-poetry, community and communication. Success of education on the first level, failure on the second.
2. The crisis of education signifies a crisis on the social and economic level which is found by the search for new solutions on the level of educational

policy and planification / and a crisis arising from the new situation and sensitivity in youngsters.

The new, still growing role of youngsters in contemporary civilisation. The new culture or 'Counter-culture' of the youngsters. Protest of the young and its different forms. The youngsters against the school and against institutionalized formation.

3. Conseqcence of the word 'order', formulated by the Edg. Faure Commission. Learning to be, on the educational level. A pedagogy of life through practice and for utilitarian goals and a pedagogy of life through poetry and for poetry.

The pedagogy of 'manipulation' or directivity expresses itself through the emphasis on adaptation : the pedagogy of inspiration advantages expression and creativity. The growing responsibility of education and educators themselves in the difficult times of civilisation and in relation to the situation of the youngsters.

Inspiration as an act of trust in the human being.

The contribution of art towards the process of human self-conscience and self-creation (towards a human and humanistic formation) [2].

1. Human formation, in function of professional objectives, is realized through the process of teaching : the accumulation of knowledge and of necessary abilities. Human formation, seen as the awakening and the inspiration of personality, asks for appropriate means and implies a different pedagogical model. We can talk about a new humanism, evoking a totally beamed spirit, a spirit of man which became pre-eminently human.

2. The new humanism reminds of the great expectations of humanity and of the great achievements of man in the field of science, art and technology. We are particularly interested in art as a means corresponding well with the above objectives. We understand art in its 2 possible significations : art as an heritage of cultural values testisfying of man's creative spirit and thus guaranteeing his continuity, and art as a creative activity typical of every human being and enriching at one and the same time man himself and his objective world.

3. Thinking about the formation of personality – in its integrative sense – we propose, thanks to the double character of art, a synthesis of cultural formation and of the activation of creative forces, which finds its pedagogical sense in the double formula : self-consciousness and self-expression of man.

4. We are not concerned with 'art as pleasure', but with 'art as a manual of life', art which permits to man to enrich his experiences, to deepen his sensibility, to attain the personal knowledge, to enlarge his imagination. This synthesis of cultural and emotional formation can lead, in favorable pedagogical circumstances, to a personality with an open mind, a self-actualising person, capable of living in a community, to understand better other people. There is a social call of rich and broadened persons and this programme of a 'human and humanistic' formation corresponds to the necessities and the expectations.

PROFESSOR DR. R. COWEN (University of London, England) :

Self-realization through education in the U.K. : Philosophies and Practices.

The stress in education in the U.K. has been upon the realization of a restricted range of social roles for pupils. Whilst this is clearly true of educational provision in the nineteenth century, the proposition can still be demonstrated in telling detail for patterns of education in the 1950's. Both the formal and hidden curricula of schools stressed the creation of certain socially valued types of persons. One such type was the public school and grammar school prefect. Self-realization was acceptable as an educational goal only within carefully circumscribed limits.

However, even in the fifties, certain alternative philosophies were becoming influential. They affected practice in the sixties. The most well-known case is the efforts to devise an apparently childcentred pedagogy at the elementary level. A far greater stress came to be placed upon the probable individual potentialities and creative selves which children possessed. The movement was mainly confined to first level education, but minor features of this movement were also institutionalised at the second level of education and were assisted by changes in examination structures.

In the changing society of the seventies, further change has taken place. The freedom from constraints of the sixties movement has been replaced philosophically by a more pretise definition of freedom too. Self-realization has been explicitly espoused by certain groups as a goal of education, often on the basis of non-English philosophies and rhetoric. Institutional pressures of a subtle sort, however, still limit the spread of these ideas into educational practice.

PROFESSOR DR. L. DESJARLAIS (University of Ottawa, Ontario, Canada) :

The school, an agent of self-realization, fact or fiction.

a. There are a number of situational factors in the school environment which have an effect on the quality of the self-realization dynamics.

b. The adolescent turns to the school for help in fulfilling certain fundamental needs in life. The school is uniquely suited to help adolescents develop a realistic comprehension of the world around them, increase their abilities to think and communicate effectively, and assume responsibility for their lives. Further, it should stimulate a desire to continue learning, essential to the attainment of full self-actualization. Does it however accomplish this ?

c. The nature of the school and the nature of the adolescent both contribute to the creation of problems in the educative process during adolescence. Let the facts and conclusions of research speak on the matter.

MOTION adopted unanimously by the General Assembly of the I.A.A.E.R.

Experts in education from universities and other centres of research, coming from almost 60 countries and meeting in a world congress at the University of Gent, studied the factors underlying an aim of profound human significance : self-realization through education.

In the course of their work they noted that among the factors which determine events in the world there are some which are worthy of humanity and which represent real values. Yet they also noted others which are less than worthy, in the sphere of economic and social life and esperially in the sphere of education.

The essential points presented through the various reports are as follows :
1. All human beings have potentialities which should be developed to an optimum degree both for the sake of the individuals themselves and for the sake of the progress of society. The environment may or may not help the development of these potentialities. It is the responsibility of society to develop conditions which will enable the individual to achieve self-realization.
2. There is complete agreement that self-realization is one of the most important questions throughout the whole world.

The congress made it possible to discover some points on which all were agreed and others which, approached from different points of view, show differences of opinion.
3. Self-realization is a very complex problem which involves many conditions and which is affected by very diverse influences.

We agree in affirming that education is one of the most important factors for the realization of the individual personality.
4. Being a World Association for the Advancement of Educational Research and having as our aim to give special emphasis to scientific research, we note that the problems which confront all educators and teachers in the realization of personality are manifold.

As yet we do not have full insight into these problems, educational research in relation to the problem of self-realization has shown itself as of major importance.

Therefore we recommend strongly that those who are carrying out research in this field should receive the help they require for their work, so that the appropriate material, psychological and emotional conditions may be ensured to enable all individuals to achieve self-realization.

Le 7ème Congrès Mondial qui se tint à Gent (Belgique) du 25 au 29 juillet 1977, sous la présidence du Professeur Dr. M.-L. VAN HERREWEGHE et la présidence d'honneur du Professeur Dr. R. VERBIST fut placé sous le haut patronage de Sa Majesté le Roi BAUDOUIN de Belgique.

Par ce premier fascicule de „Communications" qui est envoyé à tous les membres de l'Association Mondiale des Sciences de l'Éducation (A.M.S.E.) nous avons l'intention de fournir une première information sur les points essentiels qui concernent notre Association et qui ont fait l'objet des travaux réalisés durant les sessions réservées à l'A.I.S.E., et des grandes lignes du travail réalisé au Congrès même.

C'est-à-dire : les résultats des rencontres du Bureau et de l'Assemblée Générale, les résumés des rapports qui ont été présentés durant les sessions pléniaires du Congrès, ainsi que la motion finale qui est envoyée aux responsables politiques et aux différentes associations internationales mandatées en matière d'éducation.

Au cours des rencontres particulièrement chargées des problèmes de l'Association, il fut décidé, à la demande des participants au Congrès des cinq continents et représentant 57 pays, d'employer dorénament la dénomination :

„Association Mondiale des Sciences de l'Éducation" (A.M.S.E.)

et d'établir le Secrétariat Général en permanence à l'Université de Gent qui devient ainsi le siège légal de l'Association sous le direction du Prof. Dr. M.-L. VAN HERREWEGHE. L'adresse en est :

Secrétariat Général de l'A.M.S.E.
Rijksuniversiteit Gent
Pedagogisch Laboratorium
Henri Dunantlaan 1
B-9000 Gent (Belgique)

Au Bureau de l'Association qui fonctionnera pour les 4 années à venir furent élus :

- Prof. Dr. M.-L. van Herreweghe – Gent – Belgique – Président
- Prof. Dr. H. Klein – Berlin – République Démocratique Allemande
- Prof. Dr. M. Koskenniemi – Helsinki – Finlande
- Prof. Dr. G. Mialaret – Caen – France
- Prof. Dr. M. Sutherland – Leeds – Angleterre

Au Conseil :

J. W. L. Adams – Dundee – Écosse

A. Clausse – Liège – Belgique
R. D'Aeth – Exeter – Angleterre
U. Dahllöf – Stockholm – Suède
M. Debesse – Antony – France
L. Desjarlais – Ottawa – Canada
K. Galla – Prague – Tchécoslovaquie
Kn. Grue-Sørensen – Copenhagen – Danemark
C. Irwin – Detroit – États Unie d'Amérique
Th. Kellaghan – Dublin – Irelande
A. Mungala Sanzong – Kisangani – Zaïre
G. D. Piryov – Sofia – Bulgarie
N. Potkonjak – Belgrade – Yougoslavie
J. Sandven, Président du Conseil – Oslo – Norvège
H. Scheuerl – Hamburg – République Fédérale Allemande
M. Shoji – Hiroshima – Japon
J. Szarka – Budapest – Hongrie
L. Volpicelli – Roma – Italie
J. D. Vrey – Pretoria – Afrique du Sud
I. Wojnar – Warszawa – Pologne

Les statuts seront retraivaillés par les membres du Bureau, soumis à la lecture critique des représentants des différents pays, membres du Conseil, et présentés ensuite à tous les membres de l'A.M.S.E.

Les membres du Conseil ont attribués à l'unanimité au Professeur Dr. B. SUCHODOLSKI le titre de membre honoraire de l'Association. Warszawa, Pologne.

RESUMES DES RAPPORTS PRESENTES DURANT LES SESSIONS PLENIAIRES AU 7ème CONGRES MONDIAL DE L'A.I.S.E.

PROFESSEUR DR. JOHS. SANDVEN (Université d'Oslo, Norvège), Président du Conseil de l'A.I.S.E. :

Conditions pour la réalisation de la personnalité. Quelques points de vue importants.

Le rapport est centré autour de quatre thèmes :
- le sens de réalisation de la personnalité ;
- des facteurs de base dans la réalisation de la personnalité ;
- conditions scolaires et réalisation de la personnalité ;
- concept de soi comme facteur de la réalisation de la personnalité.

Le concept de réalisation de la personnalité est pris afin d'impliquer que l'individu est en possession d'un certain potentiel et que ce potentiel peut être développé de telle manière qu'il se manifeste et devient une réalité fonctionnante dans la vie quotidienne. Il est de toute importance de considérer le terme « potentiel » en rapport avec la personnalité entière, avec tous les domaines de fonctionnement, incluant ainsi non seulement le domaine intellectuel, mais aussi les domaines sociaux et émotionels.

Le fait que les fonctions intellectuelles sont plus facilement distinguées et définies que d'autres, est considéré comme la raison majeure pour l'attention considérable qu'elles tendent d'attirer et pour la forte accentuation qu'on leur attribue. Nous proposons une évaluation plus juste de nos efforts dans l'élaboration des conditions de développement.

La question se pose jusqu'à quel point le développement d'un potentiel doit avoir eu lieu avant de pouvoir conclure à la réalisation de la personnalité. Quoique le développement poussé aussi loin que possible puisse sembler désirable, il a été démontré qu'une forte accentuation d'un des domaines fonctionnels peut être nuisible à d'autres domaines, et qu'en somme nous devons tenir compte de tous les domaines. La réalisation de la personnalité est le but pour la totalité de la personnalité humaine. Dans cette perspective il est plus approprié de parler d'un degré optimal de réalisation de la personnalité que d'un degré maximal.

Quant aux conditions de la réalisation de la personnalité, on accentue comme particulièrement important que le monde environnant soit formé non seulement pour donner la protection nécessaire afin de nourrir un sentiment de sécurité, mais aussi pour procurer le montant nécessaire de provocation, afin de permettre à l'individu en développement de tendre vers l'avant et d'essayer de parfaire quelque chose au delà de ce qui est déjà maîtrisé. On constate que le besoin de protection a été accentuée dans la période d'après-guerre, mais presque exclusivement pour les premières années de la vie. En ce qui concerne les années scolaires ordinaires et la période adolescente nous avons continué un système d'éducation, qui pour une partie considérable

d'élèves a négligé le besoin de protection et sur-accentué le facteur de provocation. En plus nous n'avons pas faits des efforts suffisants pour rendre clair, pour l'élève individuel, jusqu'à quel point et dans quelles directions la provocation serait appropriée et comment provocation et protection devraient être équilibrées.

Bref, la situation est telle que dans de nombreuses parties du monde, les conditions de base pour la réalisation de la personnalité sont pauvres ou presqu'inexistants. Tandis que dans d'autres parties des resources ont été employées en une mesure toujours croissante avec l'intention d'étendre et d'égaliser les opportunités d'éducation. Malgré cela le développement de nos enfants continue à être considéré avec inquiétude, aussi dans les pays soi-disant développés.

Il est certain qu'en partie l'explication en est que les conditions au développement que nous avons essayé de préparer n'ont pas été construits et appliqués d'une manière correspondante aux besoins des différents enfants avec leur potentialités diverses et uniques, et en particulier, que nous n'avons pas été suffisamment capables de trouver l'équilibre exact entre protection et provocation.

Notre dilemme est considéré en partie comme le résultat du fait que notre concept d'une éducation générale a été défini en grande partie en termes de matières-sujets. S'il l'avait été en plus grande mesure en rapport à l'élève en tant que personne, en rapport à son développement en tant qu'être humain bien fonctionnant, et moins à l'acquisition de connaissances, il est bien probable que notre dilemme soit moins sérieux. Puisque l'école obligatoire et les occasions d'aller à l'école ont été étendues, cette accentuation de la tradition orientée vers les sujets à traiter a augmenté et prolongé les difficultés pour une proportion considérable des élèves.

Nous citons des investigations qui rendent clair que beaucoup d'élèves ont perdu leur sens de bien-être et voudraient quitter l'école immédiatement s'il leur était permis. Des recherches psychiatriques concluent que parmi les élèves du 9ème degré à Oslo, environ 20 % sont mal adaptés. Le manque de progrès à l'école est la différence la plus marquée entre ceux qui acceptent l'école et ceux que la rejettent. Des investigations parmi les enseignants révèlent qu'eux aussi éprouvent la situation comme difficile, malgré les expansions et les investissements qui sont faits.

Quoique les conditions de nature économique et matérielle soient importantes, le développement de ces conditions à un haut degré ne garantit pas par lui-même que la réalisation de la personnalité aura lieu.

Le caractère de l'environnement du point de vue psycho-pédagogique est considéré comme étant particulièrement important. Il est considéré spécialement comme étant essentiel que l'éducateur développe une conception adéquate des potentialités de l'enfant, parce que cela n'est pas seulement important dans ses efforts pour trouver un équilibre exact entre protection et provocation, mais aussi parce qu'elle influence la manière de laquelle l'enfant développe l'image de soi.

Une étude sur les causes du manque de réalisation de la personnalité a revélé qu'une conception du soi inadéquat de la part de l'enfant aussi bien qu'une conception inadéquate des potentialités de l'enfant de la part de l'enseignant, étaient les observations les plus fréquentes dans les cas ou le manque de réalisation de la personnalité se manifestait.

Généraliser l'école et la rendre accessible à un plus grand nombre d'élèves est une amélioration dans les conditions de la réalisation de la personnalité du point de vue formel et matériel. Nous soutenons, cependant, que ceci n'aboutira guère à une amélioration des conditions pour l'élève individuel, si nous n'avons pas acquis une conception adéquate de ses possibilités potentielles et si nous ne trouvons pas des provocations adaptées à ces possibilités.

PROFESSEUR DR. H. KLEIN (Recteur de la Humboldt Universität, Berlin, République Démocratique Allemande) :

Le concept « réalisation du soi » en rapport avec la réalisation du soi du point de vue d'une pédagogie marxiste-léniniste.

1. C'est d'une manière polémique que nous abordons le thème du Congrès, car « réalisation de la personnalité (du soi) » peut faire comprendre finalement que la réalisation des hommes se constitue soit uniquement, soit essentiellement par les processus d'éducation.

Afin de fonder le propre point de vue, nous traitons de :
– détermination du concept « réalisation de la personnalité » du point de vue marxiste-leniniste (philosophique, sociologique, économique) ;
– développement polémique au moyen de conceptions opposées pris dans la philosophie et la sociologie non-marxistes contemporaines ;
– les relations entre « réalisation de la personnalité » d'une part et « assimilation et actualisation des forces humaines fondamentales » d'autre part d'autant du côté développement individuel que développement social ;
– représentations fondamentales pour la détermination et la légitimité générale du développement de la personnalité, avec approfondissement de la relation « biologique et social » et les possibilités et limites de l'éducation par rapport au caractère des différentes formations de groupes.

2. Se rapprochant des idées et positions fondamentales vis-à-vis du thème émises dans le n° 1, nous désirons clarifier les conséquences dans la formation politique éducationnelle telles qu'elles sont réalisées et se réalisent pratiquement dans les pays socialistes.

Les expériences et les prises de connaissance acquises, seront présentées à la discussion. Pour toutes les données nous référerons au développement dans la situation actuelle en D.D.R.

PROFESSEUR DR. G. MIALARET (Université de Caen, France), Président de l'A.I.S.E. :

Méthodes pédagogiques et formation de la personnalité.

I. *Introduction.*

L'éducation est un phénomène particulièrement complexe aussi bien dans ses processus que dans ses résultats. On a très souvent étudié l'importance des facteurs extérieurs (milieu social par exemple) ou celle des relations maîtres-élèves mais on s'est rarement intéressé à l'action des méthodes et techniques pédagogiques elles-mêmes.

II. *La formation de la personnalité.*

1. Afin de pouvoir étudier l'action des méthodes pédagogiques sur l'évolution de la personnalité il faut préciser ce que l'on entend par personnalité et développement de la personnalité.
2. La théorie proposée est issue principalement des travaux de Henri Wallon tout en considérant les apports des autres courants de la psychologie contemporaine : la psychanalyse, l'œuvre monumentale de J. Piaget.
3. L'évolution de la personnalité sera présentée comme le résultat de l'expérience vécue de l'enfant à travers la dialectique du biologique et du social, c'est-à-dire, en fonction des conditions de vie du sujet.

III. *L'action pédagogique.*

1. Parmi ces conditions de vie, l'institution scolaire, lieu de transmission du Savoir et de l'initiation à la Culture, joue un rôle important.
2. Disciplines scolaires et processus d'apprentissage.

L'école se caractérise par des programmes, c'est-à-dire, des matières scolaires. L'initiation de l'enfant à ces disciplines suppose un apprentissage. On examinera les problèmes posés par la différence qui existe entre les processus mentaux que suppose une discipline et les processus d'apprentissage réels permis par le niveau psychologique des élèves.

3. Méthodes et techniques pédagogiques.

a. On peut classer arbitrairement des grandes méthodes pédagogiques par rapport au type d'activité psychologique qu'elles exigent. On se demandera comment s'établissent ainsi les liens avec le développement de la personnalité.
b. Des études scientifiques ont été faites pour caractériser les méthodes pédagogiques et établir leurs conséquences sur l'évolution des élèves.

IV. *Analyse sommaire de quelques problèmes.*

1. Méthode pédagogique et personnalité de l'enfant.
2. Méthode pédagogique et personnalité de l'éducateur.
3. Méthode pédagogique et les attentes du milieu ; relations du Pédagogique et du Pouvoir.

V. *Conclusion.*

L'éducation n'agit pas seulement par ses contenus mais par ses méthodes et ses procédés. Importance de la formation pédagogique des éducateurs.

PROFESSEUR DR. WM. REITZ & PROFESSEUR DR. C. IRWIN (Wayne State University, Detroit, É.U.d.A.) :

Projets innovatifs d'éducation en U.S.A. : Contenu - Substance et Méthodes de recherche.

Introduction.

Le thème général du Congrès « réalisation de la personnalité par l'éducation » suggère une multitude de directions, dimensions, chemins à suivre, projets et problèmes référant à la scène éducationnelle en U.S.A. Des questions et problèmes au sujet de l'éducation et de l'école sont approchés en vue de leur solution par diverses innovations et programmes et souvent par des techniques et méthodes de recherche sophistiquées. Les articles présents, notamment « Projets innovatifs : contenu » (Claire Irwin) et « Methodologie de recherche » (Wm. Reitz), veulent, en général, être dirigés respectivement d'une part vers la présentation d'une vue panoramique de développements nouveaux et projets en éducation professionnelle en relation avec la réalisation de la personnalité, à l'intérieur des situations d'école ; et d'autre part vers la description sélective de techniques de recherche précédant, utilisées pendant et/ou après la complétion des projets en vue de leur validation et leur évaluation.

Texte.

Les racines de la réalisation de la personnalité de l'individu entrent profondément dans le courant des idées de la culture et de l'engagement du monde et de l'Amérique. Un aperçu d'événements significatifs révélerait des associations et des activités, de grands noms et des progrès notoires dans le passé, au présent et projetés pour le futur. Nommons quelques uns : en philosophie et arts (Dewey, Huxley, Kohlberg, Emerson et Whitman) ; en psychologie humaine (Carl Rogers, A. E. Maslow, Allport, Combs, Jourard et John Cohem) ; en observations thérapeutiques et cliniques et en sensivity training (William Glasser, Virginia Starr, Fritz Perls) ; en cultes (Alan Watts et Zen, Méditation transcendantale, Pyramid Power) ; de la part de voix de minorités (Rev. Jesse Jackson et PUSH – Cesar Chavez représentant la culture Latine) ; et l'étendue et la diversité énorme des projets scolaires innovatifs des programmes et des réformes – tous désignés pour célébrer l'individu dans son caractère unique et pour découvrir et encourager chaque potentialité ultime à atteindre des « peak-experiences ». Cette nouvelle philosophie humaniste a engendré des concepts nouveaux de l'apprentissage, d'enseignement et de formation au sens large du mot. Comme l'a déclaré Maslow, le « père » de la réalisation de la personnalité :

... la fonction de l'éducation, le but de l'éducation – la finalité de l'homme, la finalité humaniste, la finalité pour autant qu'il s'agit d'êtres humains – est en fin « l'actualisation » de la personnalité d'une personne, un devenir pleinement humain, le développement à la plus grande plénitude que l'espèce humaine peut supporter où qu'un individu particulier peut atteindre. D'une façon moins technique, c'est assister la personne à devenir le meilleur qu'il est capable de devenir.

Dans son livre « Who are you » Raymond Gale fait la synthèse des points de vue de Rogers, Maslow, Allport, Combs et Jourard en présentant un « modèle humaniste de la personne ». Le catalogue se présente comme suit :

1. Chaque personne vaut la dignité et le respect qui est inhérent à la vie humaine.
2. Un être humain éprouve de la continuité et des efforts dynamiques vers la croissance tout le long de sa vie et est capable à mélanger le passé et le futur en une conscience de soi significatif.
3. Une personne est le produit du développement d'un noyau interne (le soi) qui se développe continuellement et se modifie par l'expérience.
4. L'effort vers la croissance et l'expansion du soi reçoivent leur forme et leur direction partant de l'idéal de soi de chaque individu, qui consiste en sa propre création subjective dans le cadre bio-socio-psychologique d'un courant de vie spécifique.
5. Chaque être humain est un organisme idiosyncratique et auto-consistant de croyances, valeurs, sentiments et actions manifestés dans son courant vital particulier.
6. L'auto-consistance et le caractère unique sont réfléchis dans la puissance créatrice accordée au courant vital d'une personne, formée en conformité à l'idéal de soi, lorsqu'il donne naissance à ses potentialités humaines distinctives.
7. Les efforts d'un individu dans son courant vital ont de l'influence sur ses perceptions dans le champ phénoménal, ce qui développe un rapport personnel dans la formulation des interprétations du soi et des autres.
8. Le comportement est influencé d'une manière significative par l'évaluation du soi et du monde et par le fait que son idéal de soi est dirigé vers un but.
9 L'individu est enveloppé d'une manière inextricable dans son environnement social et développe soi-même et la vérité unique de son propre courant vital à travers les dynamismes personnels et sociaux des expériences humaines.
10. Dans un champ phénoménal accueillant et quelque peu non menaçant, une personne peut apprendre un comportement qui est fondamentalement ouvert, en confiance avec soi-même et les autres, interactif, empathique et constructif.
11. Dignité, valeur, liberté, responsabilité et intégrité surgissent comme des caractéristiques humaines dans un environnement qui rend (l'être humain) inconditionné de la considération des hommes et qui procure des opportunités à maintenir et à améliorer sa personnalité.
12. Une interaction avec des gens coopératifs constitue l'influence la plus forte dans le développement et la perpétuation du concept de soi d'une per-

sonne pleinement fonctionnante qui se comporte de manière créative, consistente et holistique.

L'éducation professionelle en U.S.A. est marquée par un grand nombre de projets, d'innovations et de programmes réfléchissant l'accentuation courante telle que éducation affective, clarification des valeurs, éducation morale, auto-détermination, développement du concept de soi, auto-évaluation, self-congruence, Black-power, locus of control, développement des puissances humaines, « role » théorie, estime de soi, aspiration occupationnelle, éducation humaniste et un autre terme-clé apporté par Maslow il y a quelques années : actualisation du soi.

En résumé, alors, l'éducation professionnelle en U.S.A. est, dans un grand nombre d'efforts, profondément concerné, philosophiquement et actuellement, de l'homme, former « l'homme » en « homme », pour « l'homme », mais aussi conscient de sémantique, de sensitivités, et le rôle ressortissant des femmes substituera probablement le terme « people » ou « humain » au terme « homme ».

Les suites fâcheuses de Watergate, les cas de « leadership » vocal en faveur des groupes minoritaires et leurs problèmes et inquiétudes profondément ancrés, la reconnaissance des droits de la femme ont tous suscité l'intérêt national à la réexamination des systèmes scolaires américains et des systèmes de valeurs en termes de respect pour l'individu – « ses » droits humains et « ses » responsabilités.

Structure pour enquête.

Les directions et les perspectives pour ces présentations ont été prises d'une recherche compréhensive nationale de la littérature publiée (l'Index courant des journaux en éducation) et non publiée (ERIC Network) se référant à la réalisation de la personnalité et au rehaussement du soi, sur une période de 5 ans (1972-1977) afin de localiser des pratiques innovatrices et des projets, ensemble avec les techniques de recherche, méthodes et moyens employés par des bureaux, des agences et des individus, à la recherche d'une clarification et accentuation des valeurs humaines comme but propre de l'éducation. Des contacts personnels ont eu lieu avec des personnes en position clé associées à des programmes et des centres de recherches, afin de déterminer ce qui était important. De cette manière, plusieurs centaines d'études ont été examinées et analysées.

Organisation.

Afin de présenter les directions et la recherche en cours en U.S.A. on a examiné pour l'organisation présente des alternatives différentes. Pour des raisons de clarté et pour être complet, le plan suivant pour l'articulation a été choisi. Sept catégories, essentielles à l'enseignement, ont été selectées, dans lesquelles on peu rapporter le contenu ou la substance. Dans chaque domaine des exemples de méthodes de recherche employées de manière interne

et externe seront esquissés. Les catégories selon le niveau et le contenu sont les suivants :

1. L'apprenti (Enfant, Élève, Étudiant, Adulte).
Évaluation des besoins / Étudiants minoritaires – Noirs, Latinos, Indiens, Américains, etc. Indexes Socio-Économiques, Concept de soi.

2. L'éducateur (Enseignant, Administrateur, Staff).
Aides de l'enseignant, modèles d'entraînement ; marchandage collectif ; Differential staffing, Attentes des enseignants.

3. Objectifs, Buts, Raisons, Cours d'études, Programmes.
Approches humaines ; Objectifs de comportement ; Éducation compensatoire ; Créativité ; Abus de drogues ; Écologie ; Éducation de carrière ; Éducation en plein air ; Domaines cognitifs/affectifs ; Apprentissage de perception-moteur ; Éducation familiale ; Participation des parents et de la communauté ; Domaine psycho-moteur.

4. Enseignement, Méthodes, Didactiques.
Individualisation de l'instruction ; Enseignement en équipes ; Variété dans les présentations de l'enseignement : Méthodes Montessori, Simulation.

5. Internalisation de l'apprentissage.
Centres multi-média ; Apprentissage en équipes d'élèves ; Instruction à l'aide du computer ; Apprentissage à la découverte ; Ressources de la communauté ; Styles cognitifs et cartographie cognitive ; Sesame Street et autres programmes de télévision ; Méthodes de tuteur

6. Évaluation-Répartition de programme – de curriculum.
Évaluation nationale ; Modèles d'évaluation des états ; Modèles d'évaluation (C.I.P.P., Stake, Scrivens, Provus et autres).

7. Contexte, Organisation, Administration, Climat, Communauté.
Responsabilité ; Flexibilité, Systèmes d'approche, Transports ; Écoles communautaires ; Jardins d'école ; Écoles ouvertes ; Écoles sans grades ; Écoles paroissiales ; Performance contracting ; Voucher-system ; École pendant toute l'année ; Écoles moyennes ; Écoles libres ; Institut national d'éducation ; Bureau de l'éducation ; Laboratoires pédagogiques régionaux ; Actes de Congrès ; ESEA act de 1965 ; Commission. Comités, Conférences, Instituts, Associations professionelles ; Grandes villes ; Décisions des tribunaux.

Méthodes de recherche.

En rapport avec les projets et les programmes un large éventail de projets de recherche, de techniques, et de méthodologies ont été ou sont encore employés, y compris des questionnaires, des interviews, des échelles d'évaluation, des documentation d'écoles, des analyses de données démographiques, des instruments spécialisés comme le Minnesota Multiphasic Personality Inventory (M.M.P.I.), le Locus of Control Scale de Rotter ; des techniques d'autoévaluation, le Ohio Social Acceptance Scale ; le Battle attitude scale et les techniques du Semantic Differential Scale de Osgood ; le Self-concept Inventory de Lears ; des explications graphiques et beaucoup d'autres.

Les techniques statistiques comprennent des statistiques de base, et le controle significant des différences entre les valeurs moyennes (t-tests) ; analyse de variance, et l'analyse correlationnelle de différents types.

L'analyse du champ de force et des recherches sur l'environnement naturaliste apparaissent également. Occasionnellement on peut trouver en vue de prédictions un « factorial design » ensemble avec l'emploi de multiples R.

Des méthodes de recherches plus ambitieuses comprennent des études d'analyse de facteurs, l'analyse des Clusters, et des variations de techniques d'analyse de facteurs comme Alpha Factor Analysis, et Principal Component Analysis. La méthodologie Q, originellement développée par Stephenson a aussi été appliquée. L'analyse phénoménologique a été appliquée de manière sélective.

En guise de résumé ou de conclusion, les profits nets des grandes innovations et des efforts de recherche seront taxés et évalués.

PROFESSEUR DR. H. SCHEUERL (Hamburg Universität, République Fédérale Allemande) :

Le problème de la « réalisation de la personnalité (du soi) » dans une discussion pédagogique dans la République Fédérale Allemande.

1. Le thème du Congrès est large et permet plusieurs interprétations. Mon rapport veut informer sur quelques interprétations en R.F.A. (et à ce sujet sur la pédagogie traditionnelle allemande). Il s'agira de quelques relations historiques et philosophiques, typiques pour la discussion allemande, ainsi que de quelques implications d'ordre didactique et organisateur.

2. Le propos « Réalisation de la personnalité (du soi) » est d'une actualité spéciale en R.F.A. dans le contexte des mouvements protestataires des étudiants depuis 1968. La problématique fondamentale est cependant une problématique de principes et connaît une longue pré-histoire. Dans le thème de ce congrès il n'y a pas de mot clé qui n'entraîne pas de questions. Même la conjonction « par » (through education) peut être sujet de discussion, parce qu'elle suggère une relation causale qui peut donner lieu à une signification de controverses.

3. Je veux vérifier dans mon rapport quelques interprétations typiques des mots « soi » (Personnalité) « réalisation » et « éducation ». Et de là il faut aussi discuter des concepts qui visent l'environnement tels que « socialisation », « enculturation », « conditionnement des rapports » et « formation ». Il faut également indiquer les conséquences organisatrices pour les différents curriculi d'après les différentes conceptions du rapport mutuel entre éducation et réalisation du « soi », (pédagogie de l'image humaine, modèle technique, du dialogue, de l'interaction).

4. Sous cet aspect il y a quelques positions de la pédagogie allemande soit-disant traditionnelle et de l'ordre de la philosophie-scientifique à confronter aux tendances du « rationalisme critique » des années 60, qui ouvrent des horizons sur une possibilité d'opérationalisation en éducation scientifique ;

pour les deux tendances il se dessine depuis distinctement des pédagogues qui se tiennent à des modèles d'interprétation « critique idéologique », qui, partant d'une théorie sociale inclinent vers la « théorie critique » de la « Frankfurter Schule » et qui de là se distancient nettement tant du point de vue traditionaliste exposé dans les sciences philosophiques, que du point de vue technique, qui se range du côté empirique et rationaliste.

5. De telles orientations ont dominés durant des années en R.F.A. le domaine de la discussion de la branche. Le problème « matières » comme celui de l'aide que l'éducation doit offrir pour la réalisation de la personnalité, montre que parmi les différentes possibilités d'approche des problèmes, les alternatives exclusives n'existent que lorsque une orientation se manifeste d'une façon absolue dans une direction bien déterminée.

6. Mon rapport veut être un playdoyer pour une méditation tant sur la continuité, les complémentations communes et opposées des positions que pour une réhabilitation limitée du concept allemand « Bildung ».

PROFESSEUR DR. B. SUCHODOLSKI [1] & PROFESSEUR DR. I. WOJNAR [2] (Université de Warszawa, Pologne) :

L'acte éducationnel - directivité ou inspiration ? [1]

1. La question sur l'essence de l'acte éducationnel demeure toujours actuelle. On peut constater deux aspects de l'influence éducative, manifestés déjà sur le plan historique :

– Niveau des connaissances et des habiletés, préparation à l'accomplissement des fonctions professionnelles et sociales.

– Niveau plus profond de la personnalité : attitudes et aspirations, contenu émotionnel et imaginaire de l'existence, sentiment du sens de la vie, modes et modèles de la vie, poétique de soi, communauté et communication.

Succès de l'éducation au premier niveau, échecs – au second.

2. Crise de l'éducation signifie à la fois une crise sur le plan social et économique / ce qui trouve la quête de solutions nouvelles sur le plan de la politique éducative et de la planification de l'éducation /, et une crise provenant de la situation et de la sensibilité nouvelles chez les jeunes.

Le rôle nouveau et toujours croissant des jeunes dans la civilisation contemporaine. La nouvelle culture – ou « contre-culture » des jeunes. Contestation des jeunes et ses formes diverses. Les jeunes contre l'école et contre la formation institutionnalisée.

3. Conséquences du mot d'ordre formulé par la Commission d'Edgard Faure : Apprendre à être / Learning to be / sur le plan pédagogique.

Une pédagogie de la vie à travers la praxis et pour les buts utilitaires, et une pédagogie de la vie à travers la poésie et pour la poésie.

Pédagogie de la « manipulation » ou de la directivité s'exprime par l'accent mis sur l'adaptation ; pédagogie d'inspiration met en valeur l'expression et la créativité.

La responsabilité croissante de la pédagogie et des éducateurs, eux-mêmes, à l'époque difficile de la civilisation et par rapport à la situation des jeunes. L'inspiration en tant qu'acte de confiance à l'être humain.

Contribution de l'art dans les processus de l'autoconscience et de l'autocréation de l'homme (pour une formation humaine et humaniste) [2].

Problématique :

1. La formation humaine conforme aux objectifs professionnels se réalise à travers les processus d'enseignement : d'accumulation des connaissances et des habiletés nécessaires. La formation humaine entendue comme éveil et inspiration de la personnalité demande des moyens appropriés et elle constitue un autre modèle pédagogique. On peut parler d'un nouvel humanisme évoquant l'état d'esprit pleinement épanoui, un état d'esprit de l'homme qui est devenu Homme par excellence.
2. Le nouvel humanisme fait penser aux grandes espérances de l'humanité et aux grands achèvements de l'homme sur le plan de la science, de l'art, de la technologie. L'art nous préoccupe particulièrement en tant que moyen correspondant bien avec les objectifs signalés. Nous entendons par l'art ses deux significations possibles : l'art en tant que patrimoine des valeurs culturelles témoignant de l'esprit créateur de l'homme et garantissant sa continuité, l'art en tant qu'activité créatrice propre à tout être humain et enrichissant à la fois l'homme lui même et son monde objectif.
3. En pensant de la formation de la personnalité, dans son sens intégral, nous proposons, grâce au caractère double de l'art, une synthèse de la formation culturelle et de l'activation des forces créatrices, ce qui trouve son sens pédagogiqnue dans la formule double : l'autoconscience et l'autocréation de l'homme.
4. Il ne s'agit pas de l'art-agrément, mais de l'art-« manuel de vie », l'art permettant à l'homme d'enrichir ses expériences, d'approfondir sa sensibilité, d'atteindre le savoir personnel, d'épanouir son imagination. Cette synthèse de la formation culturelle et de la formation émotionnelle peut mener, dans les circonstances pédagogiques favorables vers une personnalité à l'esprit ouvert, une « self-actualising person » capable de vivre dans une communauté, de comprendre mieux les autres. Il existe une demande sociale des individus riches et épanouis et ce programme d'une formation « humaine et humaniste » correspond aux nécessités et aux espérances.

PROFESSEURS DR. R. COWEN (University of London, Angleterre) :

La réalisation de la personnalité par l'éducation au Royaume Uni : philosophies et réalisations.

Au Royaume Uni l'accent en éducation a été mis sur la réalisation d'une série restreinte de rôles sociaux pour les élèves. Quoique cela soit certainement

vrai pour l'éducation procurée au dix-neuvième siècle, la proposition peut toujours être démontrée par des détails révélateurs dans les modèles d'éducation dans les années 1950. Et le curriculum formel et le curriculum caché des écoles mettait l'accent sur la création de certains types de personnes socialement considérés de valeur. Un tel type était le préfet de la « public school » et de la « grammar school ». La réalisation de la personnalité était acceptable comme but pédagogique uniquement dans des limites soigneusement déterminées.

Cependant, même dans les années cinquante, certaines philosophies alternatives gagnaient en influence. Elles furent mises en pratique dans les années soixante. Le cas le mieux connu est l'effort à élaborer une pédagogie centrée apparamment sur l'enfant au niveau élémentaire. Un accent beaucoup plus fort était mis sur les probables potentialités individuelles et sur les personnalités créatives que présentaient les enfants. Le mouvement était surtout limité à l'éducation du premier niveau, mais des détails mineurs de ce mouvement ont aussi été institutionnalisés au second niveau de l'éducation et assistés par des changements dans les structures des examens.

Dans la société changeante des années soixante-dix, des changements ultérieurs ont eu lieu. La liberté de toute contrainte du mouvement des années soixante a été remplacée philosophiquement par une définition plus précise de « la liberté pour faire quelque chose ». La réalisation de la personnalité a été adoptée explicitement par certains groupes comme un des buts de l'éducation, souvent sur la base de philosophies et de rhétoriques non-anglaises. Des pressions institutionnelles d'un genre subtil, limitent cependant l'extension de ces idées dans la pratique de l'éducation.

PROFESSEUR DR. L. DESJARLAIS (Université d'Ottawa, Ontario, Canada) :

L'école, agent de réalisation de la personnalité, réalité ou fiction ?

a. Il existe un certain nombre de facteurs situationnels en milieu scolaire, qui influencent la réalisation de la personnalité.
b. L'adolescent s'attend à ce que l'école l'aide à satisfaire certains besoins vitaux fondamentaux. L'école occupe une place unique, lui permettant d'aider les adolescents à développer une compréhension réaliste du monde qui les entoure, à augmenter leurs capacités de penser et de communiquer de façon efficace et à assumer la responsabilité de leur vie. Elle devrait, de plus, leur donner ce goût de continuer à apprendre, goût essentiel à un plein épanouissement de soi, mais le fait-elle ?
c. La nature de l'école, ainsi que la nature de l'adolescence, contribuent à créer des problèmes au sein du processus éducatif durant l'adolescence.

Examinons les conclusions de la recherche sur cette importante question.

MOTION adoptée à l'unanimité par l'Assemblée Générale de l'A.I.S.E.

Les spécialistes en éducation des Universités et des autres centres de recherche de près de 60 pays réunis à l'Université de Gent Belgique en 1977 en congrès mondial, ont étudiés le problème essentiellement humain, l'auto-réalisation de la personnalité par l'éducation.

Au cours de leurs travaux ils ont mis en évidence, parmi les aspects qui déterminent des évènements dans le monde, ceux qui sont dignes de l'humanité et qui représentent de véritables valeurs pour l'humanité et d'autres d'ordre économique et social mais surtout pédagogique, qui sont moins favorable au développement de la personnalité.

Les points essentiels qui ont été présentés dans les différents rapports sont les suivants :

1. Dans tout être humain il y a des potentialités qui devraient être développées d'une façon optimale tout autant pour l'individu lui-même que pour le bien de la société.

L'environnement permet ou non le développement de ces potentialités. La société doit créer les conditions qui donnent à l'individu les possibilités de sa propre réalisation.

2. Un accord total s'est dégagé pour affirmer que la réalisation de la personnalité est une des questions les plus importantes pour l'humanité.

Le congrès a permis de mettre en évidence des points sur lesquels un accord a pu être obtenu et d'autres qui faisaient apparaître des différences d'opinion.

3. La réalisation de la personnalité est un problème très complexe qui suppose la conjonction de plusieurs conditions et sur laquelle jouent souvent des influences très variées.

Nous sommes d'accord pour affirmer que l'éducation est un des facteurs les plus importants pour la réalisation de la personnalité.

4. En tant que association mondiale des sciences de l'éducation nous avons pour but de mettre l'accent sur la recherche scientifique en éducation. Nous insistons également sur le fait que les problèmes rencontrés par les éducateurs et enseignants, dans le problème de la réalisation de la personnalité sont multiples et complexes.

Puisque jusqu'à présent nous n'avons pas encore obtenu une vue d'ensemble suffisamment précise de ces problèmes, il est de toute urgence que soit développée la recherche psycho-pédagogique dans ce domaine. C'est pourquoi nous recommandons vivement que ceux qui font de la recherche dans ce domaine, puissent recevoir l'aide nécessaire pour faire ce travail et que d'autre part les conditions matérielles, psychologiques, émotionnelles soient accordées à chaque individu afin qu'il puisse réaliser ses potentialités individuelles pour lui-même et la société.

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